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February 23, 2012

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Sent via e-mail to larry.french@state.or.us

Re: Scappoose Ordinance 816

The following are objections to Scappoose Ordinance 816, adoption date April 18, 2011. This ordinance: a) adopts a Scappoose population forecast, b) adopts the *City of Scappoose Economic Opportunities Analysis (EOA)* dated January 10, 2010, c) makes numerous revisions to Scappoose's land use code and comprehensive plan, and d) expands the Scappoose UGB by 378 acres. The ordinance was co-adopted by Columbia County on October 26, 2011, via the county's Ordinance 2011-3. The notice of adoption was sent to DLCD on February 8, 2012.

1000 Friends of Oregon appeared at the Scappoose City Council hearing on January 3, 2011, and also submitted written comments at the city and county level (Rec. 985, 1260, 1729).

These objections are divided into the following sections:

I. EMPLOYMENT FORECAST
- Base Year Employment – Objection 1
- Historical Growth Trends – Objection 2
- Regional Growth and Scappoose Capture Rate – Objection 3
- Effect of UGB Expansion on Scappoose Growth Potential – Objection 4
- Consistency with Population Forecast – Objection 5

II. ALLOCATION OF EMPLOYMENT FORECAST
- Jobs on Residential Land – Objection 6
- "Other Services" Jobs – Objection 7

III. SITE CHARACTERISTICS – Objection 8

IV. AIRPORT EXPANSION
- Runway – Objection 9
- Hangars – Objection 10

V. INDUSTRIAL LAND INVENTORY – Objection 11

VI. CONCLUSION

I. EMPLOYMENT FORECAST

Introduction.

According to the *EOA,* page 32 (Rec. 98):

> "Demand for industrial and office commercial land is a direct function of employment growth in industrial sectors that occupy this type of space. As a result, the projections of industrial and office demand are based on forecasted employment growth by industrial sector within the City of Scappoose."

Accordingly, the *EOA's* 20-year employment forecast forms the foundation of the commercial and industrial employment land need analysis; Exhibits 1.01 through 1.09 (Rec. 117-125) directly convert the employment forecast to land demand using a series of mathematical functions. We do not object to this forecast-based approach, which is consistent with OAR 660-009-0015(2)'s requirement that "[t]he economic opportunities analysis must identify the number of sites by type reasonably expected to be needed to accommodate the expected employment growth based on the site characteristics typical of expected uses." (emphasis added)

However, we do object to the employment forecast itself. The unreasonably high forecast taints all work built upon it, including the land need analysis and UGB expansion. While Scappoose expects only 3,421 new residents over the next 20 years, the *EOA* predicts 8,068 new jobs. Public testimony has pointed out the implausibility of such an outcome, which would require 2.4 new jobs for every new resident, children, the aged and the disabled included. Currently, there is only 0.36 job for every Scappoose resident. While we understand the city's desire to grow more jobs, the *EOA* must be based on facts and reasonable. Otherwise, adverse consequences will include dis-investment in existing lands inside the UGB, unnecessary expenditures of scarce resources to provide services to land that is not needed, and loss of productive farmland.

The *EOA* is plainly unreasonable when evaluated under many other relevant metrics. For example, the *EOA* claims that Scappoose, with just 0.3% of the total population in the 7-county Portland Metropolitan Statistical Area (MSA), will capture over 7% of all the manufacturing jobs created in entire MSA over the next 20 years. The *EOA* assumes Scappoose's job growth will greatly exceed established historical trends, by proposing growth rates that are:

- 377% of the actual 2003-2009 Scappoose manufacturing growth rate (11.7% vs. 3.1%)
- 543% of the actual 1990-2010 Portland MSA total jobs growth rate (7.6% vs. 1.4%).
- 640% of Scappoose's current MSA total jobs capture rate (1.6% vs. 0.25%)
- 3,650% of Scappoose's current MSA manufacturing capture rate (7.3% vs. 0.2%)

Despite these anomalies, the city believes its employment forecast is reasonable. According to the *City of Scappoose City Council Findings (Findings)*, page 18 (Rec. 23), "The Council finds the employment growth figures reasonable in light of local historical growth trends, the regional context of the employment projections, and increased employment opportunities near the airport as a result of the proposed UGB expansion." We object to each of these three flawed rationales for the forecast, for reasons discussed in detail below under Objections 2, 3 and 4. Objection 1

relates to errors in determining Scappoose's current baseline employment; Objection 5 identifies inconsistencies between the employment forecast and the population forecast.

Base Year Employment.

Objection 1: The *EOA* violates OAR 660-009-0010(5) and Goal 2, adequate factual base, by failing to utilize current data to determine the 2010 baseline employment in Scappoose.

The *EOA* starts with baseline Scappoose employment data from 2007[1], and then makes adjustments to bring the total forward to 2010. The *EOA's* Figure 24 shows these adjustments, which include an average decrease of 1.7% per year for manufacturing jobs, apparently based on the 2007-2009 countywide employment trend. (Rec. 93)

However, 2009 data are available for Scappoose (Rec. 1748-9). Current data must be used to derive the 2010 jobs estimate, according to OAR 660-009-0010(5), which requires the use of "the best available or readily collectable information." The 2007 and 2009 data as supplied by the Oregon Employment Department (OED) are reproduced below, along with resulting 2007-2009 AAGRs[2] for the OED data, and 2007-2010 AAGRs assumed by the *EOA*:

Table 1.

Covered Employment in Scappoose Urban Growth Boundary (UGB)

Sector	2007	2009	Actual AAGR 2007-2009[3]	EOA's AAGR 2007-2010[4]
Agriculture, Forestry, Fishing and Hunting	c	c		
Construction	71	56	-11.2%	-3.1%
Manufacturing	206	177	-7.3%	-1.7%
Wholesale and Retail Trade	406	395	-1.4%	reported separately
Transportation, Warehousing, and Utilities	64	69	3.8%	1.1%
Information	54	55	0.9%	-0.2%
Financial Activities	49	71	20.4%	-0.3%
Professional and Business Services	81	69	-7.7%	-0.2%
Education and Health Services	362	385	3.1%	1.1%
Leisure and Hospitality	221	213	-1.8%	-0.3%
Other Services	79	98	11.4%	2.0%
Public Administration	48	46	-2.1%	0.7%
Total*	**1,641**	**1,634**	**-0.2%**	**0.1%**

c - data is suppressed to maintain confidentiality; distributed to other sectors
* - Total does include employment in Agriculture, Forestry, Fishing and Hunting
Source: Oregon Employment Department, QCEW
Provided by: Charlie Johnson, Senior Economic Analyst, (503) 947-1268

Although the *EOA's* assumed overall job AAGR of 0.1% is close to the -0.2% actual AAGR, for most individual job categories, the *EOA's* 2007-2010 AAGRs are not consistent with what has

[1] The *EOA* states the data is from 2006, but the consultant later acknowledged this was error; 2007 data was used. See Johnson Reid letter dated 8/16/11, page 5 (Rec. 2077): "the *EOA* refers to 2006 as the base year multiple times…the reference to '2006' is an error in the text. The numbers…are from the year 2007…"

[2] AAGR means "average annual growth rate"

[3] Computation: (2009 jobs/2007 jobs)^(1/2) - 1

[4] See *EOA* Figure 24 (Rec. 93)

actually happened, as demonstrated by the OED data. For example, while the *EOA* assumes job losses for manufacturing since 2006 were only 1.7% per year, the actual decrease in manufacturing jobs from 2007 to 2009 was much higher: 7.3% per year. Similar problems are evident in construction (-3.1% vs. -11.2%), finance (-0.3% vs. +20.4%), and other services (+2.0% vs. +11.4%).

If not corrected, these discrepancies will be transmitted through the entire planning period, and the 20-year land need will be overestimated by the same percentage as the base year overestimation. For example, if the 2007 manufacturing jobs are adjusted by the *EOA's* assumed rate of -1.7% per year, the baseline 2010 manufacturing jobs total is 218. If adjustment is made using the actual rate of -7.3% per year, the baseline 2010 manufacturing jobs total is 183. This is about a 20% difference, and will result in a 2030 manufacturing jobs total – and associated land need – that is also about 20% higher. Such substantial differences cannot be ignored, and should be corrected.

Again, it is immaterial that the <u>overall</u> 2007-2010 job growth rate assumed by the EOA is close to the actual rate; the rates for individual job categories must also be correct. This is because the different business types demand different land and building types. For example, if financial services jobs are underestimated by 20%, while manufacturing jobs are overestimated by 20%, this will translate into an improper surplus of industrial land coupled with a shortage of commercial land. The overall amount of land need might also be skewed, because, for example, financial services can and generally do locate in multi-story office buildings, while some industrial uses require single-story buildings and use more land.

The manufacturing portion of Scappoose's forecast is particularly important, since it is the driver of the remainder of the employment forecast. Pages 3 and 4 of the March 1, 2011 Johnson Reid letter explain that for every 500 manufacturing jobs, an additional 821 jobs are created (Rec. 1335-6). Thus, the 1,755 new manufacturing jobs projected by the *EOA* will result in 2,882 additional jobs; together these comprise 4,637 jobs, or 60% of the total new jobs forecast. If the baseline manufacturing jobs total is inflated by 20%, it could therefore translate into an improper overage of almost 1,000 additional jobs.

The author of the *EOA,* Johnson Reid, has suggested that since 2009 employment data was not yet available when they began work on the *EOA* in May 2009, the city and county are not obligated to revise the *EOA* in light of the 2009 data. However, the *EOA* was not completed until January 10, 2011, nearly two years after the consultants started their project; it should have been obvious to the consultants that changed circumstances were likely, and the *EOA* should have been updated prior to finalization. Further, it is to be expected that public hearings will reveal new data and information that may lead to revisions in a draft proposal; that is a primary purpose of Goal 1, Citizen Involvement. It is not reasonable to conclude that only the data known to the consultants, potentially years before the public has an opportunity to provide input, should be considered.

<u>Remedy</u>: Remand the *EOA* with instructions to recalculate the baseline 2010 employment estimate using the OED's 2009 employment data for Scappoose.

Historical Growth Trends.

Objection 2: The *EOA* violates OAR 660-009-0010(5), OAR 660-009-0015(1), Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because the employment forecast is based on short-term boom-years growth rates despite longer-term historical trends that are much lower.

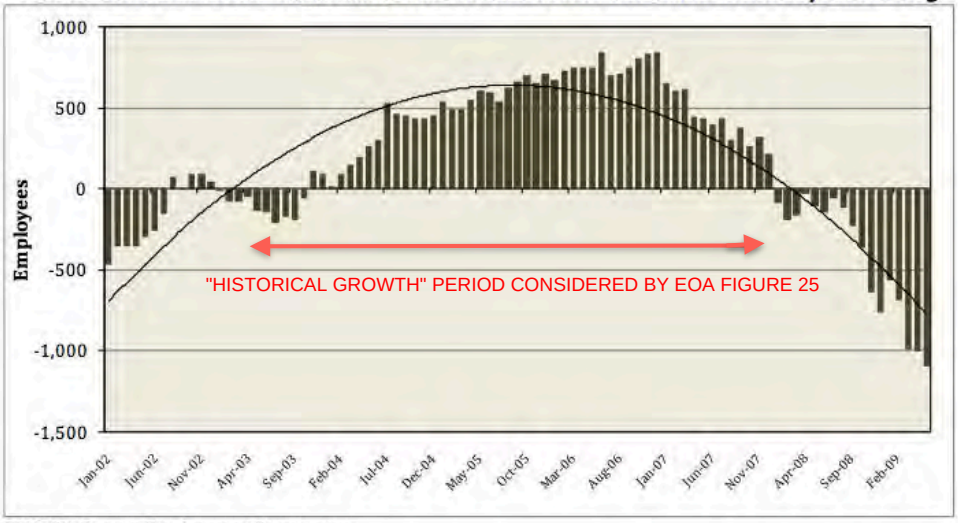
As previously discussed, page 18 of the *Findings* states, "The Council finds the employment growth figures reasonable in light of local historical growth trends, the regional context of the employment projections, and increased employment opportunities near the airport as a result of the proposed UGB expansion." (Rec. 23, emphasis added)

According to OAR 660-009-0015(1), "The economic opportunities analysis must identify the major categories of industrial or other employment uses that could reasonably be expected to locate or expand in the planning area based on information about national, state, regional, county or local trends. This review of trends is the principal basis for estimating future industrial and other employment uses…" The trend analysis should include a comprehensive examination of historical growth rates, and indeed, the *EOA* purports to do that.

Page 27 of the *EOA* states "the historical growth rates and the state's growth projections outlined in Figure 25 are used as baseline estimates to forecast the rate of employment growth by industry in this analysis." (Rec. 93) However, closer inspection reveals that the "historical growth rates" used in the *EOA* are not bona-fide long-term trends, but rather are just the economic boom years of 2003-2007. These years are not valid indicators of future long-term trends, not only because four years is a very short period of time, but also because the economic conditions during that period were unusual and are not likely to be repeated.

At the top of page 11, the *EOA* states, "Oregon experienced exceptional employment growth between mid-2003 and 2007." (Rec. 77) This four-year boom period is clearly seen on the *EOA's* Figure 16, page 18, which is reproduced below. The *EOA* fails to consider the negative growth periods that bracket the 2003-2007 boom, focusing instead on just those four years.

FIGURE 16: YEAR-OVER-YEAR EMPLOYMENT GROWTH IN COLUMBIA COUNTY, 2002-2009



SOURCE: Oregon Employment Department

As previously noted, 2008 and 2009 OED employment data is available for Scappoose, and should have been considered by the *EOA* (Rec. 1748-9). While the 2003-2009 time period is also not truly "long term," because it contains both economic boom and bust periods, it is more capable of informing a 20-year forecast than the incomplete 2003-2007 data.

As shown in Table 2 below, there are significant differences between the 2003-2007 trends reported in the *EOA* and the 2003-2009 trends supplied by the OED. The overall 2003-2009 job growth rate is only 60% of the 2003-2007 rate, and the 2003-2009 manufacturing job growth rate is only 35% of the 2003-2007 rate. The fluctuations in Scappoose job growth rates during the 2003-2009 period underscore the importance of looking broadly at historical trends, and not zeroing in on unusual periods of job growth or losses when gathering information for long-term forecasts. This is especially true in small job markets such as Scappoose, where the addition or loss of a dozen jobs can represent 10-20% of the entire job market in that sector.

Table 2.

Covered Employment in Scappoose Urban Growth Boundary (UGB)				
Sector	2003	2009	2003-2009 AAGR	2003-2007 AAGR (per EOA)
Agriculture, Forestry, Fishing and Hunting	c	c		-
Construction	66	56	-2.7%	5.6%
Manufacturing	147	177	3.1%	9.0%
Wholesale and Retail Trade	342	395	2.4%	Reported separately
Transportation, Warehousing, and Utilities	48	69	6.2%	7.6%
Information	25	55	14.0%	-4.2%
Financial Activities	53	71	5.0%	5.9%
Professional and Business Services	73	69	-0.9%	15.8%
Education and Health Services	337	385	2.2%	1.8%
Leisure and Hospitality	161	213	4.8%	9.6%
Other Services	47	98	13.0%	13.3%
Public Administration	40	46	2.4%	5.7%
TOTAL	**1,339**	**1,634**	**3.4%**	**5.6%**

c - data is suppressed to maintain confidentiality; distributed to other sectors
* - Total does include employment in Agriculture, Forestry, Fishing and Hunting
Source: Oregon Employment Department, QCEW
Provided by: Charlie Johnson, Senior Economic Analyst, (503) 947-1268

Another job estimation tool is the U.S. Census Bureau's "On The Map" tool; it has Scappoose employment data going back to 2002. While the data inputs driving this tool are different than those used by the Oregon Employment Division, the trends reflected are similar. A printout generated by the tool[5] corroborates the OED's 2003-2009 trends; the data are summarized in the below Table 3. First, over the longer term, overall job growth is less than half the 2003-2007 trend. Second, over the longer term, manufacturing jobs were shed overall, despite a very high growth rate from 2003-2007.

[5] "Scappoose UGB Employment Per U.S. Census 'On The Map' Tool 2002-2009" (Rec. 1750-4)

Table 3.

	2002	2009	AAGR 2002-2009	2003	2007	AAGR 2003-2007
per EOA Estimate						
Total Jobs (covered)	no data	no data	no data	no data	1,641	5.6%
Manufacturing Jobs	no data	no data	no data	no data	206	9.0%
per US Census Tool						
Total Jobs	1,345	1,576	2.3%	1,356	1,638	4.8%
Manufacturing Jobs	191	172	-1.5%	196	259	7.2%

Perhaps the best proof that it is inappropriate to rely on the 2003-2007 boom years for long-term forecasting is the profound difference between the actual Region 1 2003-2007 growth rates and the OED's Region 1 forecast for 2008-2018 (Rec. 1009). The below Table 4 contains a tabulation of the actual 2003-2007 AAGRs and the forecasted AAGRs, for both Region 1 as a whole (as forecasted by OED), and for Scappoose (as forecasted by the *EOA).* Also shown is the percentage that the forecasted AAGRs bear to the 2003-2007 actual AAGRs; this demonstrates the relationship between the two.

Table 4.

	REGION 1 ACTUAL 2003-2007 AAGR#	OED's REGION 1 FORECAST 2008-2018 AAGR*	2008-2018 AAGR as percentage of 2003-2007 AAGR	SCAPPOOSE ACTUAL 2003-2007 AAGR#	*EOA's* SCAPPOOSE FORECAST 2010-2030 AAGRΨ	2010-2030 AAGR as percentage of 2003-2007 AAGR
OVERALL	**2.8%**	**0.9%**	**31%**	**5.6%**	**7.6%**	**136%**
Construction	7.4%	0.8%	10%	5.6%	4.7%	84%
Manufacturing	0.3%	-0.6%	from gain to loss	9.0%	11.7%	130%
Wholesale Trade	6.0%	1.0%	16%	8.5%	8.5%	100%
Retail Trade	2.1%	1.2%	59%	3.9%	6.1%	156%
T.W.U.	0.6%	0.5%	82%	7.6%	9.4%	124%
Information	-0.2%	-0.3%	50% loss	-4.2%	0.5%	from loss to gain
Financial Activities	2.2%	0.8%	35%	5.9%	5.9%	100%
Professional & Business	7.0%	1.5%	21%	15.8%	12.8%	81%
Education & Health	2.7%	2.7%	98%	1.8%	4.4%	244%
Leisure & Hospitality	3.8%	1.1%	30%	9.6%	6.7%	70%
Other Services	4.0%	0.7%	17%	13.3%	10.7%	80%
Public Administration	2.4%	0.6%	24%	5.7%	5.7%	100%

As reported by *EOA's* Figure 25 (Rec. 95)
*OED forecast: (%Change + 1)^(1/10)-1 (Rec. 1009)

As reported by *EOA's* Figure 25 (Rec. 93)
Ψ As reported by *EOA's* Figure 26 (Rec. 95)

Note that in every category of employment, the OED's forecasted 2008-2018 AAGR is less than the actual 2003-2007 AAGR, in many cases markedly so. For example, the 0.8% AAGR forecasted rate for construction is only 10% of the actual 7.4% AAGR seen from 2003-2007. Manufacturing went from a 0.3% per year increase during 2003-2007 to a forecasted 0.6% per year loss of jobs over the coming decade. This demonstrates that professional state forecasters do not rely on the 2003-2007 growth rates as indicators of future long-term trends. That would not be a professionally acceptable methodology.

The right side of the chart shows how the *EOA*'s long-term forecast compares with the actual Scappoose job growth from 2003-2007. In contrast to the OED's forecast, the *EOA* carries forward the boom-years growth rates to the long term forecast. In most categories, Scappoose's

20-year forecast is either equal to the 2003-2007 actual growth rate, or is even higher, in some cases markedly so. Only in a few sectors is the long-term forecast AAGR lower than the 2003-2007 AAGR, and even then the reduction from the boom-years rate is not nearly as great as in the OED's forecast. For example, the OED forecasts construction growing at only 10% of the boom-years rate, while the *EOA* forecasts construction growing at 84% of the boom-years rate. OED's overall Region 1 job growth rate for 2008-2018 is only 31% of that seen from 2003-2007. By comparison, the *EOA* predicts that Scappoose's future growth will be 136% of that seen during 2003-2007, some of the best years on record.

The *EOA's* reliance on the 2003-2007 boom years is error; an inquiry into longer-term trends is needed to inform a 20-year forecast. Since there are no available employment data specific to Scappoose prior to 2002,[6] it is necessary to examine the long-term trends in a larger geographic area. Page 28 of the *EOA* states that "Scappoose is highly influenced by Portland economic trends," so consideration of the long-term Portland MSA historical job growth rate is a relevant and important inquiry (Rec. 94). In 1990, there were 726,818 jobs in the Portland MSA.[7] In 2010, there were 965,500 jobs,[8] yielding a 1.4% AAGR from 1990-2010.[9] By contrast, the *EOA* predicts a 7.6% AAGR for Scappoose. This is not reasonable; moreover, the conclusion lacks substantial evidence.

To summarize, the *EOA* forecasts an overall jobs growth rate that is 543% of the actual 20-year Portland MSA growth rate (7.6% vs. 1.4%). The *EOA* also forecasts a manufacturing growth rate that is 377% of the actual Scappoose 2003-2009 manufacturing jobs growth rate (11.7% vs. 3.1%). These extreme deviations from established trends were made without adequate analysis, explanation, or evidentiary support.

The *EOA's* overreliance on the 2003-2007 boom years, combined with its failure to give comparable weight to 2002, 2008 and 2009 Scappoose data and longer-term Portland MSA data, is contrary to OAR 660-009-0010(5), which requires use of "the best available or readily collectable information."

OAR 660-009-0015(1) requires that a valid trend analysis be the primary means of estimating future employment uses. The *EOA's* approach violates Goal 2's requirement for an adequate factual base for this trend analysis; a reasonable fact finder would not discount relevant long-term trends, and rely instead on a four-year period recognized by the *EOA* as "exceptional" to determine a 20-year forecast.

Remedy: Remand the *EOA* with instructions to revise the employment forecast downward, in light of the 2002, 2008 and 2009 Scappoose employment data and Portland MSA longer-term trends.

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[6] According to OED staff, see email from Charles Johnson (Rec. 1748)
[7] See page 119 from the September 2009 Metro document "20 and 50 year Regional Population and Employment Range Forecasts." (Rec. 1758)
[8] See "Portland-Vancouver-Hillsboro MSA Annual Average Nonfarm Employment." (Rec. 1760)
[9] Calculation: (965500/726800)^(1/20)-1 = 1.4%

Regional Growth and Scappoose Capture Rate

Objection 3: The *EOA* violates OAR 660-009-0010(5), OAR 660-009-0015(1), Goal 2, adequate factual base, Goal 2, coordination, and is not supported by substantial evidence in the whole record, because it fails to make a reasonable determination of the expected regional growth Scappoose could capture, and because it improperly relies on capture of growth planned to occur within other jurisdictions.

As previously discussed, page 18 of the *Findings* states, "The Council finds the employment growth figures reasonable in light of local historical growth trends, the regional context of the employment projections, and increased employment opportunities near the airport as a result of the proposed UGB expansion." (Rec. 23, emphasis added) Page 17 of the *Findings* notes, "…much of Scappoose's potential is due to external factors related to its proximity to the Portland metro area and Hillsboro." (Rec. 22)

Goal 9 encourages analysis of regional trends. OAR 660-009-0015(1) notes that cities are "strongly encouraged to analyze trends and establish employment projections in a geographic area larger than the planning area and to determine the percentage of employment growth reasonably expected to be captured for the planning area...."

However, despite the decision's clear reliance on regional trends, the *EOA* does not make a reasonable, realistic correlation between the various regional employment forecasts and the *EOA's* very ambitious assumptions. For example, OED's Region 1 forecast (Rec. 1009) projects a 0.9% region-wide employment growth rate; the *EOA* assumes a 7.6% Scappoose employment growth rate. On page 28, the *EOA* dismisses this discrepancy, claiming that "[i]t could also be argued that it is inappropriate to apply Region 1 forecasts to the City of Scappoose....Scappoose is highly influenced by Portland economic trends and it is far more appropriate to consider Scappoose's future employment growth in terms of expected Portland area trends..." (Rec. 94) The implication is that the Portland employment projections are much higher than the Region 1 forecast, thus justifying the *EOA's* radical departure from the reasonable Region 1 forecast.

However, the *EOA* does not actually provide the Region 2 Portland-area forecast; a participant later supplied it.[10] The below table demonstrates a high degree of correlation between the OED's Region 1 and Region 2 forecasts, as well as with the longer-term 7-county Portland MSA forecast prepared by Metro. In many sectors, the Portland-area Region 2 forecast is actually lower than the Region 1 forecast, such as construction, retail, education & health, and financial. If anything, the Region 2 and Portland MSA forecasts provide substantial evidence that the *EOA's* forecast is unreasonably high.

[10] See Record 1009-11

Table 5.

	OED's REGION 2 FORECAST 2008-2018 AAGR*	OED's REGION 1 FORECAST 2008-2018 AAGR*	PORTLAND MSA "LOW" FORECAST 2010-2030 AAGR#	PORTLAND MSA "HIGH" FORECAST 2010-2030 AAGR#	*EOA's* SCAPPOOSE FORECAST 2010-2030 AAGR
OVERALL	**1.0%**	**0.9%**	**1.5%**	**1.9%**	**7.6%**
Construction	0.2%	0.8%	-0.3%	2.1%	4.7%
Manufacturing	-0.3%	-0.6%	0.1%	0.9%	11.7%
Wholesale Trade	1.0%	1.0%	1.7%	1.7%	8.5%
Retail Trade	0.7%	1.2%	0.6%	1.1%	6.1%
T.W.U.	0.5%	0.5%	2.0%	2.0%	9.4%
Information	0.4%	-0.3%	2.0%	2.6%	0.5%
Financial Activities	0.4%	0.8%	1.8%	2.0%	5.9%
Professional & Business	1.6%	1.5%	1.9%	2.8%	12.8%
Education & Health	2.0%	2.7%	2.8%	3.0%	4.4%
Leisure & Hospitality	1.1%	1.1%	1.8%	1.9%	6.7%
Other Services	0.7%	0.7%	2.7%	3.0%	10.7%
Public Administration	0.9%	0.6%	0.9%	0.9%	5.7%

* OED forecast: (%Change + 1)^(1/10)-1 (Rec. 1009-11)
# See "Metro Forecast Compilation" (Rec. 1763)

There are significant differences between the overall AAGRs of the two OED forecasts, which are 0.9% and 1.0% per year, and the 7.6% per year Scappoose forecast in the *EOA.* This is about 8 times the rate predicted by OED for either Region 1 or 2. The differences in certain employment classifications are even higher. For example, while the OED predicts an annual loss of manufacturing jobs in both Regions 1 and 2, the *EOA* predicts an 11.7% per year increase. The OED's forecasts have historically been on the high side;[11] the record contains no evidence that the current OED forecast is unreasonably low, or that such a large departure from the current OED forecast is warranted.

There are also significant differences with Metro's 20-year forecast. Even under Metro's most optimistic "High" scenario, the proposed Scappoose AAGR is 4 times the high-end forecasted rate for overall job growth in the Portland MSA (7.6% vs. 1.9%). The proposed manufacturing rate is 1,300% of the Portland MSA's high-end rate (11.7% vs. 0.9%). Again, the decision does not allege that Metro's forecast is incorrect, nor does it provide evidence that Scappoose's growth rates will be that much higher.

After 1000 Friends of Oregon initially objected to the proposed 7.6% overall growth rate, consultant Johnson Reid wrote a letter dated March 1, 2011, which is attached to the decision as Appendix 7B (Rec. 359), and which is quoted on page 18 of the *Findings* (Rec. 23) as follows:

> "As a stand-alone estimate, ignoring the City's regional context, we would agree that this rate of growth would be implausible to assume. The projections are defensible though in light of the City's geographic position within the Portland-Vancouver Principal Metropolitan Statistical Area (PMSA)."

[11] See "Forecasting a Long Term Trend: Historical Analysis of the Oregon Employment Department's 10-year Industry Employment Projections" prepared by OED, dated June 2011 (Rec. 1764-5)

The letter goes on to say that it is reasonable to assume that over the next 20 years, Scappoose will capture 1.7% of the roughly 500,000 jobs added to the Portland MSA. However, no evidence is provided that this is feasible or reasonable. It appears the tacit argument is that since there is a large reservoir of job growth in the Portland MSA, the small amount of jobs that would need to come to Scappoose in order to achieve the proposed 7.6% growth rate isn't enough to be worth arguing about. When considered in a vacuum, 1.7% might seem like a small, achievable number. However, that figure looks different when considered in the context of Scappoose's small size compared to the entire Portland MSA, which has over 2 million residents:

Table 6.

	2010 Population
Portland MSA[12]	2,226,000
Portland MSA Outside Metro Boundary[13]	890,400
Scappoose[14]	6,680

Scappoose comprises just 0.3% of the Portland MSA's population, yet the EOA assumes it will capture 1.7% of the MSA's jobs. Scappoose makes up 0.8% of the population located within the MSA, but outside the Metro boundary, yet "[t]he employment forecast in the EOA reflects a 7.0% to 9.5% share of the growth assumed to be captured outside of the Metro UGB."[15] Evidence is lacking for these claims.

Evaluation of actual Scappoose capture rates shows that the *EOA's* assumptions go far beyond historic trends, and are not realistic, especially for manufacturing. The *EOA* claims that Scappoose, despite comprising only 0.3% of the total population in the Portland MSA, will capture over 7% of <u>all</u> the manufacturing jobs created in the MSA over the next 20 years. As shown below, this capture rate is <u>35 times</u> higher than Scappoose has currently achieved.

Table 7.

	2010 Actual	**2030 Projected**	**2010-2030 Growth (computed)**
Portland MSA Total Jobs	965,500[16]	1,475,900[17]	510,400
Scappoose Total Jobs	2,425[18]	10,493[19]	8,068
Scappoose Total Jobs Capture Rate	0.25%		1.6%
Portland MSA Manufacturing Jobs	106,700[20]	130,800[21]	24,100
Scappoose Manufacturing Jobs	215[22]	1,970[23]	1,755
Scappoose Manufacturing Jobs Capture Rate	0.20%		7.3%

[12] 2010 Census (Rec. 1766)
[13] 40% of Portland MSA total, per page 101 of Metro's "2009 – 2030 Urban Growth Report" (Rec. 1747)
[14] PSU estimate (Rec. 1767)
[15] March 1, 2011 letter from Johnson Reid (Rec. 359), also quoted in *Findings*, page 18 (Rec. 23)
[16] See "Portland-Vancouver-Hillsboro MSA Annual Average Nonfarm Employment" (Rec. 1760)
[17] See Record 1758-9, "Base" scenario, Q4 option. However, the medium growth scenario may be too high, since the actual Portland MSA 2010 employment of 965,500 is closer to the "Low" 2010 jobs figure (926,200) than it is to the "Base" 2010 figure (1,040,100).
[18] According to the *EOA,* Figure 26. As discussed in Section I above, we contend this figure is too high. (Rec. 95)
[19] Ibid.
[20] "Portland-Vancouver-Hillsboro MSA Annual Average Nonfarm Employment" (Rec. 1760)
[21] Page 120, "20 and 50 year Regional Population and Employment Range Forecasts," Q4 option (Rec. 1759)
[22] According to the *EOA,* Figure 26 (Rec. 95)
[23] Ibid.

It is doubtful that the other communities in the Portland MSA would agree with the *EOA's* unspoken claim that they will not grow as quickly because Scappoose will siphon off a much larger share of the total Portland MSA manufacturing jobs than in past years. Other cities in the Portland MSA, such as Newberg, have aggressive job creation programs and clearly intend to vigorously compete for their share of Portland MSA job growth.

The *EOA* does not acknowledge the magnitude of the job shift from other, competing communities that would have to occur for its ambitious predictions to come true. The following chart compares the difference between Scappoose's actual and projected capture rates for overall job growth and for the manufacturing subset. Even when examining only the portion of the Portland MSA job growth that is expected to locate outside the Metro boundary, the *EOA* still projects a manufacturing capture rate for which there is no evidentiary basis: 19 times higher than the current capture rate.

Table 8.

	2010 Actual	2010-2030 Growth
Portland MSA Total Jobs Outside Metro	193,100[24]	132,704[25]
Scappoose Total Jobs	2,425	8,068
Scappoose "Outside" Total Jobs Capture Rate	1.3%	6.1%
Portland MSA Manufacturing Jobs Outside Metro	21,340[26]	9,176[27]
Scappoose Manufacturing Jobs	215	1,755
Scappoose "Outside" Manufacturing Jobs Capture Rate	1.0%	19.1%

Significantly, Table 8's analysis is consistent with Metro's expectation that outlying areas will experience higher manufacturing capture rates than in the past. Despite the fact that areas outside the Metro boundary currently hold just 20% of the total manufacturing jobs in the Portland MSA, it is expected that these outside areas will capture roughly 43% of future Portland MSA industry. This does mean more jobs for outlying areas such as Scappoose, but not nearly to the level envisioned by the EOA. The above Table 8 uses this higher 43% capture rate to compute the number of Portland MSA jobs available to outside areas, not the current 20% rate. However, even with this increase, Scappoose would have to capture a share of these "outside jobs" that is least 19 times larger than it has to date. There is a lack of substantial evidence supporting this conclusion.

As previously discussed, the manufacturing portion of Scappoose's forecast should be examined closely, since it is the driver of the remainder of the employment forecast, according to the March 1, 2011 Johnson Reid letter (Rec. 1335-6). If Scappoose adds "outside" manufacturing jobs at the same capture rate it enjoys now, 1.0%, this would yield about 92 new jobs by 2030, a realistic increase of at least 43% from current levels. However, the *EOA* claims Scappoose will add 1,755 new manufacturing jobs, 19 times as many as could be expected based on current

[24] 20% of total, per page 34 of Metro's "2009-2030 Urban Growth Report." (Rec. 1745)
[25] 26% of total, Ibid., page 33 (assumed average of "Low" and "High" capture rates). (Rec. 1744)
[26] 20% of total, Ibid., page 34. (Rec. 1745)
[27] 43% of total, Ibid., page 33 (assumed average of "Low" and "High" capture rates). (Rec. 1744)

"outside" MSA capture rates. This is not reasonable.

The decision attempts to justify the excessively large forecast with a claim that growth currently planned to occur inside the Metro UGB will instead occur in Scappoose, because Metro will fail to expand its UGB to accommodate future industrial demand. Page 18 of the *Findings* states:

> *"If the Metro area does not expand its UGB, the implication for Scappoose is that there will be some spillover demand for large industrial sites within the UGB, giving Scappoose an opportunity to capture considerable spillover growth from the Portland metro area. As Scappoose is not part of Metro's jurisdiction, but is part of the Portland regional economy, the City is well placed to provide the large land types that Metro has limited."* (Rec. 23, emphasis added)

Page 17 of the *Findings* claims "Metro's recently prepared Urban Growth Report and associated research reveal an undersupply of large industrial lots in the Metro region." (Rec. 22) However, this is not actually true in all categories. The below table, taken from page 86 of the referenced Metro *Urban Growth Report 2009-2030,* shows that in fact there is an oversupply of large lots in the 25-50 acre range, even under the "high growth" scenario (Rec. 1746).

Table 32: Comparison of large lot supply and the demand range (2010 to 2030) with no tax lot assembly assumption
Source: Metro, based on local review, 2009

Lot size (acres)	Lots available	High growth lot demand	Low growth lot demand
25 to 50	37	27	17
50 to 100	9	16	11
100 plus	4	5	5

Despite Metro's oversupply of between 10 and 20 lots in the 25-50 acre range, the *EOA* claims that this "shortage" will cause Scappoose to experience unprecedented growth. After 1000 Friends of Oregon initially objected to the *EOA's* characterization of the Metro land supply, Johnson Reid responded with a letter on January 7, 2010, stating the following:

> *"Part of the disparity between the EOA and the Metro UGR cited is in how buildable industrial land is quantified. Much of the Metro area's remaining large lot supply is severely constrained from a development perspective, and while counted towards meeting requirements it is effectively not available to the market. As an example, Metro's large-lot inventory includes sites such as West Hayden Island, which likely has a decade of entitlement work before any industrial use can be considered, and allowable uses will likely be very limited."* (Rec. 1296)

Even if this conclusory statement is accepted as true, it does not prove that Metro will fail to serve these lands during its 20-year planning period. It is normal for some land in a 20-year supply to be unserved at the beginning of the 20-year period. It is immaterial that West Hayden Island may take a decade to come online, when Metro's planning horizon extends to 2030. The land that Scappoose proposes to bring into the UGB is also unserved, and may remain so for quite some time.

In addition, the condition of Metro's land supply has already been factored into forecasted capture rates, as discussed above. Metro believes that areas outside the Metro boundary will capture 43% of future manufacturing growth, despite a current share of only 20%. This change may well be due to the concerns Johnson Reid expressed about the quality of Metro's land supply. However, as detailed by the above Table 8, even assuming this dramatic increase in manufacturing job capture by outlying areas, Scappoose would still need to attract a 1,900% larger share of this "outside" growth than it has in the past. This is not a reasonable assumption, and lacks substantial evidence to support it.

It is also not reasonable to assume that Metro will fail to remedy any bona fide land shortages that develop. In fact, after Scappoose adopted the *EOA,* the Metro Council approved a UGB expansion in Hillsboro of over 300 acres, specifically for large-lot industrial development (Rec. 2033-72). Metro is required by law to evaluate its UGB every 5 years. If Metro identifies a need for additional large lots, additional UGB expansions will likely occur over the next 20 years.

The *EOA* is based on what may happen "if the Metro area does not expand its UGB." But that is not what has actually happened, and that assumption is not a reasonable basis for planning. LUBA has held that if a city located outside the Metro UGB wishes to plan to capture growth currently anticipated to occur within the Metro UGB, then it must specifically coordinate that desire with Metro and the affected units of government within the Metro UGB. *1000 Friends of Oregon v. City of North Plains*, 27 Or LUBA 372 (1994). That has not occurred in this case; Scappoose therefore may not assume it will capture any part of the employment growth planned to occur inside the Metro UGB.

To summarize, the *EOA's* forecast claims that Scappoose, with just 0.3% of the total population in the Portland MSA, will capture over 7% of <u>all</u> the manufacturing jobs created in the 7-county MSA over the next 20 years. The *EOA* assumes that Scappoose employment will grow at:

- 760% of OED's Region 1 & 2 forecasted total jobs growth rate (7.6% vs. 1.0%)
- 400% of the Portland MSA's forecasted "high range" total jobs growth rate (7.6% vs. 1.9%)
- 1,300% of the MSA's forecasted "high range" manufacturing growth rate (11.7% vs. 0.9%)
- 640% of Scappoose's current MSA total jobs capture rate (1.6% vs. 0.25%)
- 3,650% of Scappoose's current MSA manufacturing capture rate (7.3% vs. 0.2%)
- 469% of Scappoose's current MSA "outside" total jobs capture rate (6.1% vs. 1.3%)
- 1,910% of Scappoose's current MSA "outside" manufacturing capture rate (19.1% vs. 1.0%)

These extreme deviations from adopted regional forecasts and established capture rate trends were made without adequate analysis, explanation or evidentiary support. In addition, the decision violates Goal 2's coordination requirements because it assumes that Scappoose will capture growth currently planned to occur inside the Metro UGB, and possibly other jurisdictions as well, without coordinating with those jurisdictions.

OAR 660-009-0015(1) requires that a valid trend analysis be the primary means of estimating future employment uses. When cities choose to analyze and rely upon regional trends, as Scappoose has done, the rule further directs cities to "determine the percentage of [regional] employment growth reasonably expected to be captured for the planning area...."

The *EOA's* approach violates Goal 2's requirement for an adequate factual base for this regional trend analysis; a reasonable fact finder would not assume that Scappoose's future capture rates will be many times higher than they currently are, based on the information in the whole record.

Remedy: Remand the *EOA* with instructions to revise the employment forecast downward, in light of the OED and Portland MSA employment forecasts, and the actual capture rates Scappoose has achieved.

Effect of UGB Expansion on Scappoose Growth Potential.

Objection 4: The *EOA* violates OAR 660-009-0010(5), OAR 660-009-0015(1), Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because it wrongly assumes that the proposed UGB expansion will cause a substantial increase in employment growth, beyond historical trends.

As previously discussed, page 18 of the *Findings* states, "The Council finds the employment growth figures reasonable in light of local historical growth trends, the regional context of the employment projections, and increased employment opportunities near the airport as a result of the proposed UGB expansion." (Rec. 23, emphasis added) Put differently, the *Findings* assume that the high forecast is justified because Scappoose is being "held back" by a lack of serviced industrial land; once more land is added to the UGB, employment growth will increase far beyond historic levels. According to page 17 (Rec. 22):

> "The ability of Scappoose to attract employers depends on its ability to provide basic urban infrastructure to sites meeting the following criteria:
>
> • Large acreage, best if a mix of sizes is available, ranging from 50 to 200 acres
> • Flat topography
> • Regular shape, such as a square or rectangle
> • No environmental contamination
> • Free of wetlands
> • Industrially zoned
> • Direct access to Highway 30, along an uncongested road with no tight turns
> • Direct freight rail access
> • Airport"

The *EOA's* foundational assumption is that once Scappoose adds land meeting these criteria, industrial growth will take off, resulting in growth rates much higher than the city has ever experienced. However, there is already a substantial amount of industrial and commercial land in Scappoose that is sitting unused, despite having nearly all of these special qualities. Per the *Findings*, page 13, "…more than half of Scappoose's existing employment sites are serviced and ready for development in the short-term," and "…private landowners are actively marketing several parcels inside the UGB." (Rec. 18)

The below charts are taken from page 4 of the January 14, 2010 Winterbrook Planning memo titled "Scappoose Draft Vacant and Potential Redevelopment Lands," which is attached to the decision as Appendix 1 (Rec. 257).

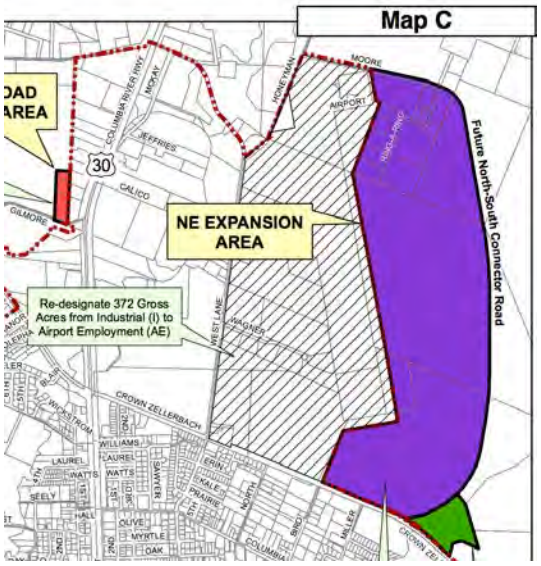
Table 6: Industrial Vacant and Developed (Redevelopable) Land Supply

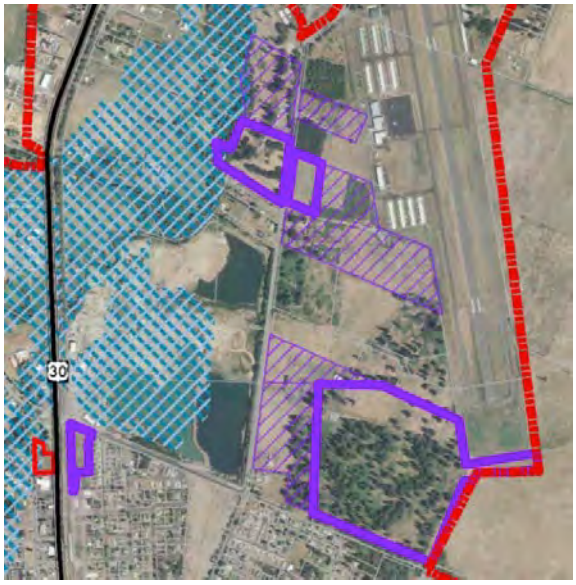
Size	Number of Tax Lots	Total Topo-Suitable Acres
1 to 5 Acres	3	9
5 to 20 Acres	5	54
20 to 40 Acres	1	30
40 Acres +	1	60
Totals	**10**	**153**

Table 7: Commercial and Developed (Redevelopable) Land Supply

Size	Number of Lots	Total Topo-Suitable Acres
1 to 5 Acres	15	14
5 to 20 Acres	3	17
20 to 50 Acres	0	0
50 Acres +	0	0
Totals	**18**	**31**

The following map on the left is taken from the decision's Map C (Rec. 253). The aerial photo is taken from the Winterbrook inventory, attached as Appendix 1 to the decision, Map 4 (Rec. 265).





The area with black hatching on the left map is the existing industrial area proposed for continued use as airport-related employment land (the proposed expansion area is solid purple). The aerial map on the right shows this same area, with vacant industrial land outlined in purple. Re-developable industrial land is shown with purple hatching. It also appears that there is another large unused industrial area just north of the 60-acre parcel, which for unknown reasons was not counted by the Winterbrook inventory. As shown on Figures 1-4 of the *Scappoose UGB Infrastructure Report*, Appendix 3 to the decision, water, sewer, storm drainage and major collector street infrastructure already serve this entire area (Rec. 308-311). The area also has direct access to the airport.

The record shows there are ample building opportunities in every category of industrial land, and also quite a bit of commercial land. Of particular interest is the vacant 60-acre industrial site, which is unconstrained and in a single ownership. The site, along with most of Scappoose's other industrial sites, is ready to develop, yet stands unused. It is also large, flat, regularly shaped, free of wetlands, and has direct access to Highway 39 and the airport – the same characteristics the *EOA* claims are needed to attract industry.

As shown by the above Winterbrook charts, there are at least 153 acres of serviced industrial land (we believe the total is actually higher, as discussed in Section IV below). At the *EOA's* average industrial density of 14.3 employees per acre,[28] this land would accommodate 2,188 new industrial jobs, more than ten times the number of industrial jobs currently located in Scappoose. Most of this land is held in large lots, including one 30-acre parcel, and one 60-acre parcel. And again, all of this land is already served with collector roads and utilities, according to the city's own planning documents.

This large supply of serviced, available land is evidence that Scappoose is not being "held back" by lack of raw land. It is not reasonable to conclude that adding more of this same kind of land to the UGB would materially increase historical business development or job creation rates. The *Findings'* conclusion that there will be "increased employment opportunities near the airport as a result of the proposed UGB expansion" is unfounded.

Remedy: Remand the *EOA* with instructions to revise the employment forecast substantially downward, in accordance with Scappoose's historic economic growth patterns, which are the best indicators of the city's long-term economic prospects, given the lack of evidence to the contrary.

Consistency with Population Forecast.

Objection 5: The *EOA* violates OAR 660-024-0040(1), Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because the employment forecast is inconsistent with the adopted population forecast.

OAR 660-024-0040(1) provides in part: "The UGB must be based on the adopted 20-year population forecast for the urban area described in OAR 660-024-0030, and must provide for needed housing, employment and other urban uses such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period consistent with the land need requirements of Goal 14 and this rule."

The adopted 20-year population forecast[29] provides a 2030 forecast for Scappoose of 10,022, an increase of 3,342 people from the 2010 population of 6,680. Despite this modest population increase, the *EOA* predicts a 2030 job total of 10,492, an increase of 8,067 new jobs from the 2010 total of 2,425 jobs.[30]

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[28] *EOA* page 31 (Rec. 97)

[29] Columbia County Ordinance 2009-7, co-adopted by the challenged decision (Rec. 215)

[30] According to the *EOA* page 29, Figure 26 (Rec. 95)

In order for the proposed employment forecast to occur, 2.4 new jobs would need to be created for every new resident – children, the aged and the disabled included (8,067 new jobs for 3,342 new residents). This seems highly improbable; currently, there is only 0.36 job for each Scappoose resident (2,425 existing jobs for 6,680 existing residents).

The ratio of jobs-per-resident is a common measure of employment density. Most urban areas have considerably fewer jobs than residents, since many people cannot work due to age, disability, life situation, or other factors. The below Table 9 compares three jobs-per-resident ratios: the Portland MSA, Scappoose in 2010, and Scappoose in 2030 under the county-adopted population forecast and the proposed employment forecast.[31]

Table 9.

	Population	Jobs	Jobs-Per-Resident
Portland MSA 2010 Actual	2,226,000	965,500	0.43
Scappoose 2010 Actual	6,680	2,425	0.36
Scappoose 2030 Forecast	10,022	10,492	1.05

The data show that the current jobs-per-resident ratio in Scappoose is 0.36 – somewhat less than the 0.43 ratio seen in the Portland MSA as a whole. There is no evidence to support that in 20 years, Scappoose's ratio will undergo a dramatic change from 0.36 to 1.05 jobs-per-resident.

Instead of providing evidence that the shift in jobs-per-resident ratio was reasonable, the *EOA's* authors claimed that they expected Scappoose to grow much faster than predicted by the adopted population forecast: "employment growth is expected to outpace population growth considerably based on two factors: reliance on a modest population growth forecast, and the City's strong economic growth policies...based on the actual historical growth rate in Scappoose, there is reason to conclude that the coordinated projection may be somewhat low." (Rec 799-800)

It is instructive to calculate the population growth Scappoose would have to experience, in order to keep its jobs-per-resident ratio within actual observed limits while also fulfilling the proposed employment forecast. Even at the higher Portland MSA average ratio of 0.43 jobs-per-resident ratio, it would require a 2030 Scappoose population of 24,400 people.[32] This is a population increase of 17,720 new residents, more than <u>five times</u> the modest increase of 3,342 people predicted by the adopted 2030 population forecast.

This large inconsistency between the adopted population forecast and the proposed employment forecast means that the UGB evaluation does not comply with OAR 660-024-0040(1)'s requirement that "[t]he UGB must be based on the adopted 20-year population forecast for the urban area described in OAR 660-024-0030." While there is no requirement that population and employment forecasts match each other in growth rates, there must be evidence to support both forecasts and any deviation. As the Land Conservation and Development Commission stated in it order concerning the City of Woodburn's UGB expansion:

[31] Data taken from this letter's Tables 6 and 7, and Record 97 and 95.

[32] 10,492 jobs for 24,400 residents = 0.43 jobs-per-resident

> "The more a city's land need for employment based on its analysis of economic opportunities and sites diverges from what would be predicted based solely on forecasted population and employment growth and employee-per-acre ratios, the more thoroughly the city will need to substantiate its economic opportunities analysis and resulting site needs."[33]

The city's decision fails to meet LCDC's standard.

Remedy: Remand the *EOA* with instructions to revise the employment forecast downward to correlate with a jobs-per-resident ratio that is no higher than the current Portland MSA ratio of 0.43, unless additional evidence is provided that substantiates a higher ratio.

II. ALLOCATION OF EMPLOYMENT FORECAST

Jobs on Residential Land.

Objection 6: The *EOA* violates Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because it assumes that no new jobs will locate in residential areas, despite the inclusion of home business workers in the employment forecast.

Page 26 of the *EOA* notes that OED employment data reports "covered employment" only, those jobs tracked through unemployment insurance (Rec. 92). The *EOA* states that "[b]ecause this data omits a significant portion of the workforce who are not covered (i.e. sole-proprietors, self-employed, commission workers) the estimates must be revised to reflect true employment. Estimates from the Bureau of Economic Analysis (BEA) indicate that in 2006 [sic][34] covered employment accounted for approximately 67.9% of total employment in Columbia County, with individual estimates reported by broad sector." Accordingly, the *EOA* increased the OED-reported 2007 employment levels from 1,641 jobs to 2,418 jobs.

The problem arises because the *EOA* fails to later take into account that some of the forecasted future jobs will locate on residential land. If the *EOA* is going to make the assumption that one-third of all jobs are sole-proprietors, self-employed, or commission workers, then that assumption must be carried through the land need analysis. The *EOA* wrongly assumes that all new jobs will need industrial or commercial land, with no new jobs located in residential areas, despite the inclusion of home workers in the employment forecast. This is an internal inconsistency that overestimates the overall land need.

After this concern was raised at the local level, the *EOA's* author responded that "[t]he EOA analysis adjusts the 'covered employment' numbers to estimate non-covered employment as well, such as sole proprietorships and the self employed. Not all of these are home occupation

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[33] LCDC Approval Order 11-WKTASK-001802, March 16, 2011.

[34] As previously discussed, the correct year is 2007. See Johnson Reid letter dated 8/16/11, page 5: "the *EOA* refers to 2006 as the base year multiple times…the reference to '2006' is an error in the text. The numbers…are from the year 2007…" See also footnote 2 to Figure 23 that accompanies the quoted text, which confirms the data are from 2007 (Rec. 2077).

businesses."[35] We agree that "not all" of the non-covered jobs are home occupations. However, implicit in the consultant's response is an admission that some of them are; these should be properly accounted for by assuming those jobs will locate on residential land.

Remedy: Remand the *EOA* with instructions to determine the portion of the employment forecast that is due to home occupations, and revise the land need analysis to reflect that these jobs will not locate on commercial or industrial land.

"Other Services" Jobs.

Objection 7: The *EOA* violates Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because it assumes that 60% of the Other Services category of jobs will site on industrial land, despite evidence that most of these jobs will site on non-industrial land.

In Exhibit 1.05 in Technical Appendix E to the *EOA*, the "Other Services" sector accounts for the second largest total number of new jobs allocated to industrial land, comprising 889 of the 3,112 new industrial jobs (Rec. 121). This number is so high because the *EOA* presumes that 60% of jobs in Other Services sector will require industrial land.

However, allocating 60% of the Other Services jobs to industrial land is not reasonable because that sector consists primarily of businesses that do not use industrial land. The OED Region 1 employment forecast and detailed breakout for Other Services (Rec. 1016-18) show that regionally, most employment growth in this sector is expected in businesses that generally prefer a non-industrial location.

Of the new jobs expected in the OED's Region 1 forecast for the Other Services category, 1,300 are "personal and laundry services" such as hair salons, dog groomers, photofinishing, dry cleaners, etc. There is no evidence that these businesses need industrial locations; if they need good visibility and convenient access for customers, they may locate primarily in commercial areas. Region-wide, another 1,500 jobs are with "membership associations and organizations" such as churches, advocacy groups, and business associations like the Chamber of Commerce. These are office jobs. Together, these two categories comprise almost 60% of the new Other Services jobs forecasted by OED for Region 1.

The remaining 2,000 Other Services jobs in the Region 1 forecast involve "repair and maintenance." Of these, about half are automotive maintenance, and most of the others are repair shops for household items like shoes, garden equipment, electronics and furniture. There is no evidence that these jobs need industrial locations. Even quasi-industrial uses like auto repair may prefer a commercial location with good visibility. A reasonable assumption might be that no more than half of these 2,000 jobs would use industrial land.

Summing together the three sub-categories of Other Services land, it appears that up to 3,800 of the total Other Services jobs in Region 1 may site on non-industrial land, roughly 80%, and the remaining 1,000 jobs will site on industrial land, roughly 20%. The *EOA,* by contrast, assumes

[35] See January 7, 2010 letter from Johnson Reid, page 6.

that in Scappoose, 60% of the Other Services jobs will instead site on industrial land – three times the reasonable assumption based on Region 1 data.

The choice of whether to site these businesses on office versus industrial land is important, because the assumed job density for Other Services jobs on office land is 38 jobs per acre, almost twice the 18.5 jobs per acre density of Other Services jobs on industrial land.[36]

Remedy: Remand the *EOA* with instructions to either demonstrate that the number of Other Services jobs assumed to need industrial land is supported by substantial evidence, or revise the calculations according to an analysis of the expected land needs of these businesses.

III. SITE CHARACTERISTICS

Objection 8: The *EOA* violates OAR 660-009-0015(2), OAR 660-009-0005(11), Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because there is no explanation for how the lot size site characteristics were derived, and there is no substantial evidence demonstrating a need for large lots in any category.

The *EOA's* Figure 33 lists the amount of each type and size of site supposedly needed through 2030 (Rec. 103). A portion of this figure is reproduced below; this objection pertains to the site types marked in red.

FIGURE 33: EMPLOYMENT LAND DEMAND BY SITE SIZE FOR SCAPPOOSE (2030)

Land Demand by Site Size				
		Demand Projections		
		Typical Acreage	Sites	Gross Acres
Office	Large	***25.0***	1	14.5
	Medium	***10.0***	1	9.7
	Small	***5.0***	11	56.3
	SubTotal		***13***	***80.5***
Commercial Retail	Large	***20.0***	0	0.0
	Medium	***7.0***	4	25.8
	Small	***1.0***	6	6.3
	SubTotal		***10***	***32.1***
Industrial	Large	***50.0***	2	107.6
	Medium	***30.0***	1	35.0
	Small	***7.0***	7	51.1
	Tech/Flex	***12.0***	2	21.5
	Airpark Emp.	***5.0***	11	53.8
	SubTotal		***23***	***269.0***

[36] Per Exhibit 1.01 (Rec. 117) in Technical Appendix E to the *EOA,* Medium Scenario, 593 Other Services jobs are expected on office land. Exhibit 1.03 (Rec. 119) allocates 15.6 acres for these jobs, resulting in a gross job density of 38 jobs per acre. Exhibit 1.05 (Rec. 121) shows that another 889 Other Services jobs are expected on industrial land. According to Exhibit 1.09 (Rec. 125), these jobs will require 48.0 acres of land, for a gross job density of 18.5 jobs per acre. See also the chart on page 31.

The record contains no explanation for how these figures were derived, and no substantial evidence demonstrating an actual need for large lots in any category. Page 16 of the *Findings* includes a conclusory statement that site characteristics are "based on Johnson Reid's expertise…" but does not cite any evidence that supports Johnson Reid's conclusions (Rec. 21). LUBA has held that unsupported expert opinion does not constitute evidence.[37]

Instead, the record contains substantial evidence that there is in fact no need for any lots over 5 acres in both the industrial and office categories. The following chart is taken from page 39 of the *EOA,* where it is described as identifying "archetypal site requirements" for small, medium and large office and industrial businesses (Rec. 105). Note that these classifications for office and industrial building site sizes and needed acreage ranges correlate exactly with the more detailed breakouts found on pages 41-45 (Rec. 107-11).

	Building Size/SF	Typical Acreage Ranges
OFFICE		
Large	60,000-500,000+	3.5-20
Medium	12,000-70,000	0.5-3.0
Small	400-13,000	0.12-3.0
INDUSTRIAL		
Large	90,000-750,000+	20-200+
Medium	25,000-100,000	4.0-25
Small	500-30,000	0.5-5.0
COMMERCIAL		
Large	45,000-500,000+	7.0-100
Medium	12,000-50,000	3.5-15
Small	0.5	0.5-5

The data needed to translate this chart into Scappoose-specific land needs is found in Exhibit 1.11 of the Technical Appendix to the original *EOA,* in a table titled "Projected Distribution of Demand By Size of Space, Scappoose, Oregon." (Rec. 608) It is reproduced below. Note that there is no demand shown from industrial users needing more than 19,800 square feet of space. Instead, the entire Scappoose demand is from users that, according to the above chart, typically need only small industrial sites of 0.5 to 5.0 acres. Similarly, Exhibit 1.11 demonstrates that there is no need for office sites larger than 3.0 acres, because there is no projected demand from firms needing more than 49,800 square feet of space.

[37] *Palmer v. Lane County*, 29 Or LUBA 436 (1995).

EXHIBIT 1.11
PROJECTED DISTRIBUTION OF DEMAND BY SIZE OF SPACE
SCAPPOOSE, OREGON
2010-2030

Medium Growth	Net New Demand for Space (SF)	Distribution of Need by Firm Size/Space Required (SF) 3/							
		Under 800	800-1,800	1,800-3,800	3,800-9,800	9,800-19,800	19,800-49,800	49,800-100,000	Over 100,000
Office Demand 1/									
2010 - 2015	119,184	41,442	20,977	28,782	16,425	1,232	10,325	0	0
2015 - 2020	182,285	63,383	32,084	44,021	25,121	1,884	15,791	0	0
2020 - 2025	285,325	99,212	50,220	68,905	39,322	2,949	24,718	0	0
2025 - 2030	456,376	158,689	80,326	110,213	62,895	4,717	39,536	0	0
2008-2028	**1,043,169**	**362,726**	**183,607**	**251,921**	**143,763**	**10,782**	**90,370**	**0**	**0**
Share:		*34.8%*	*17.6%*	*24.1%*	*13.8%*	*1.0%*	*8.7%*	*0.0%*	*0.0%*
Industrial Demand 2/									
2010 - 2015	241,064	59,238	23,071	46,589	82,538	29,629	0	0	0
2015 - 2020	394,268	96,885	37,733	76,198	134,993	48,459	0	0	0
2020 - 2025	647,823	159,193	62,000	125,201	221,807	79,623	0	0	0
2025 - 2030	1,068,956	262,680	102,304	206,590	365,999	131,384	0	0	0
2008-2028	**2,352,110**	**577,996**	**225,108**	**454,578**	**805,337**	**289,095**	**0**	**0**	**0**
Share:		*24.6%*	*9.6%*	*19.3%*	*34.2%*	*12.3%*	*0.0%*	*0.0%*	*0.0%*

Taken together, these two tables show that the *EOA* itself demonstrates no need for industrial or office sites larger than 5 acres. This evidence is in direct conflict with the *EOA's* unsupported conclusion that large tracts of land must be added to the UGB to provide 10- to 50-acre sites.

When this issue was raised at the local level, the *EOA's* author responded by excising the above Exhibit 1.11 from the *EOA,* claiming it was "erroneous." (Rec 1299) However, no other evidence was supplied to explain the need for the 10- to 50-acre sites. Further, the *EOA's* remaining exhibits still correlate perfectly with the excised Exhibit 1.11. For example:

Net New Office Demand shown on excised *EOA* Exhibit 1.11 (Rec. 608) .....1,043,169 sf
Net New Office Demand shown on remaining *EOA* Exhibit 1.02 (Rec. 118).....1,043,169 sf

Net New Industrial Demand shown on excised *EOA* Exhibit 1.11(Rec. 608).....2,352,110 sf
Net New Industrial Demand shown on remaining *EOA* Exhibit 1.07 (Rec. 123).....2,352,110 sf

The purpose of the excised Exhibit 1.11 was to break down office and industrial land demand according to the space requirements of the expected new businesses. Significantly, despite the removal of this analysis on the claim that it was "erroneous," no revised analysis was submitted. The lack of countervailing evidence, combined with the exact correlation between the removed material and the remaining exhibits, provides strong evidence that the excised Exhibit 1.11 was not truly "erroneous."

One may wonder whether the *EOA's* proposal to add large parcels to the UGB is based on a plan to provide small sites within larger "office park" or "industrial park" models. However, there is no identified need for either industrial or office business parks in the *EOA.* The *EOA* does discuss an "Airpark Business Park" model, but 53.8 acres for this use are already provided as a separate land need, per Figure 33 (Rec. 103). There is a claimed need for five <u>additional</u> large

sites, in addition to the 53.8-acre airpark development, without any evidence that these sites are needed for office and/or industrial parks, or for any other uses.

Even if there were an established need for large office or industrial parks, this would still not warrant narrowing the focus of UGB expansion locations solely to large parcels. The typical reason for including a large site in a UGB expansion is because a single large user requires this. Business and industrial parks are very different, and typically are made up of many lots clustered together. These developments are akin to residential subdivisions, in that they are often planned as one project, but ultimately are sold off piecemeal to unrelated parties. Clustering for a business or industrial park can be done on a site made up of smaller parcels, and so would not trigger the need to add large parcels to the UGB.

Finally, the *EOA's* discussion titled "Factors That Affect Site Selection" on page 48-50 is not material to Scappoose's situation (Rec. 114-6). Johnson Reid evaluated a "small sample" of lead sheets from "fairly large employers" that "do not represent a comprehensive review of all recruitments" and that "do not show site requirements for all firms…" (pg 48) In other words, the samples evaluated were narrowed to include only large manufacturers requiring large sites, and the results are not representative of a valid cross-section of the potential market for sites.

In addition, many of these firms had requirements that Scappoose cannot meet, and are therefore unsuitable comparisons. For example:

Rail. Some firms needed rail, however, the *EOA* does not provide any rail served sites. Others cannot be close to rail due to vibration; however, rail is in close proximity to the proposed UGB expansion area.

I-5 Access. Some firms needed to be within 5 miles of I-5; Scappoose is much farther away.

Electricity. "Many of the firms have large electricity demands." We could find no evidence in the record that Scappoose's infrastructure is suitable for these businesses.

Water. Some firms had very high water needs. We could find no evidence in the record that Scappoose's infrastructure is suitable for these businesses; indeed, the infrastructure analysis attached to the decision as Appendix 3 shows that Scappoose does not have the ability to provide more than minimal water and sewer services to new employers (Rec. 282-317).

Due to the narrow sampling and failure to exclude employers who would not consider Scappoose since their specific needs cannot be met, the "Factors That Affect Site Selection" discussion is merely a hypothetical analysis of a narrow subset of large manufacturers who have shopped the entire state of Oregon for large sites. It is statistically invalid and cannot form an accurate basis for determining specific large lot land needs in Scappoose.

Remedy: Remand the *EOA* with instructions to either remove the claimed need for 10+ acre sites, or provide additional evidence that supports the claimed need.

IV. AIRPORT EXPANSION

The *EOA's* Figure 33 lists a 50-acre expansion for extension of the airport's runway, and a 40-acre expansion for additional public hangar space (Rec. 103). A portion of this figure is reproduced below.

Public Uses	Special Uses		
	Hangar Reserve	1	40.0
	Runway Extension	1	50.0
	PCC Campus	1	20.0
	SubTotal	***3***	***110.0***

We object to inclusion of both the 50 acres for future runway extension and the 40 acres for future public hangar expansion, because the airport's adopted master plan does not show that there is a bona fide need for these facilities within the 20-year planning period.

Runway.

Objection 9: The *EOA* violates OAR 660-024-0040(1), Goal 14, Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because it includes 50 acres for a runway expansion despite the adopted airport master plan's conclusion that no runway expansion is needed during the 20-year planning period.

There is no evidence to support the claimed need; the 2004 *Airpark Master Plan Update for Scappoose Industrial Airpark* (*Airpark Plan*) concludes there is no need for runway expansion. Portions of the plan are included in the record; we have attached the entire plan for convenience. Page 3-14 states, "The facility needs evaluation…indicates that the runway's current length of 5,100 feet is sufficient throughout the planning period and will not consider additional runway length for the existing or forecast fleet mix." We can find nothing else in the record or findings that establishes a bona fide need for a runway expansion.

Remedy: Remand the *EOA* with instructions to remove the 50 acres for runway expansion from the claimed land need.

Hangars.

Objection 10: The *EOA* violates OAR 660-024-0040(1), Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because it includes 40 acres for airplane hangar expansion that is intended to serve demand beyond the airport's 20-year planning period.

The *Airpark Plan* relies on a 20-year forecast that predicts based aircraft will increase from 140 to 195 planes, an increase of 39% over the planning period.[38] Hangar space must be provided for a portion of these based aircraft; the 20-year requirements are shown in the *Airpark Plan's* Table

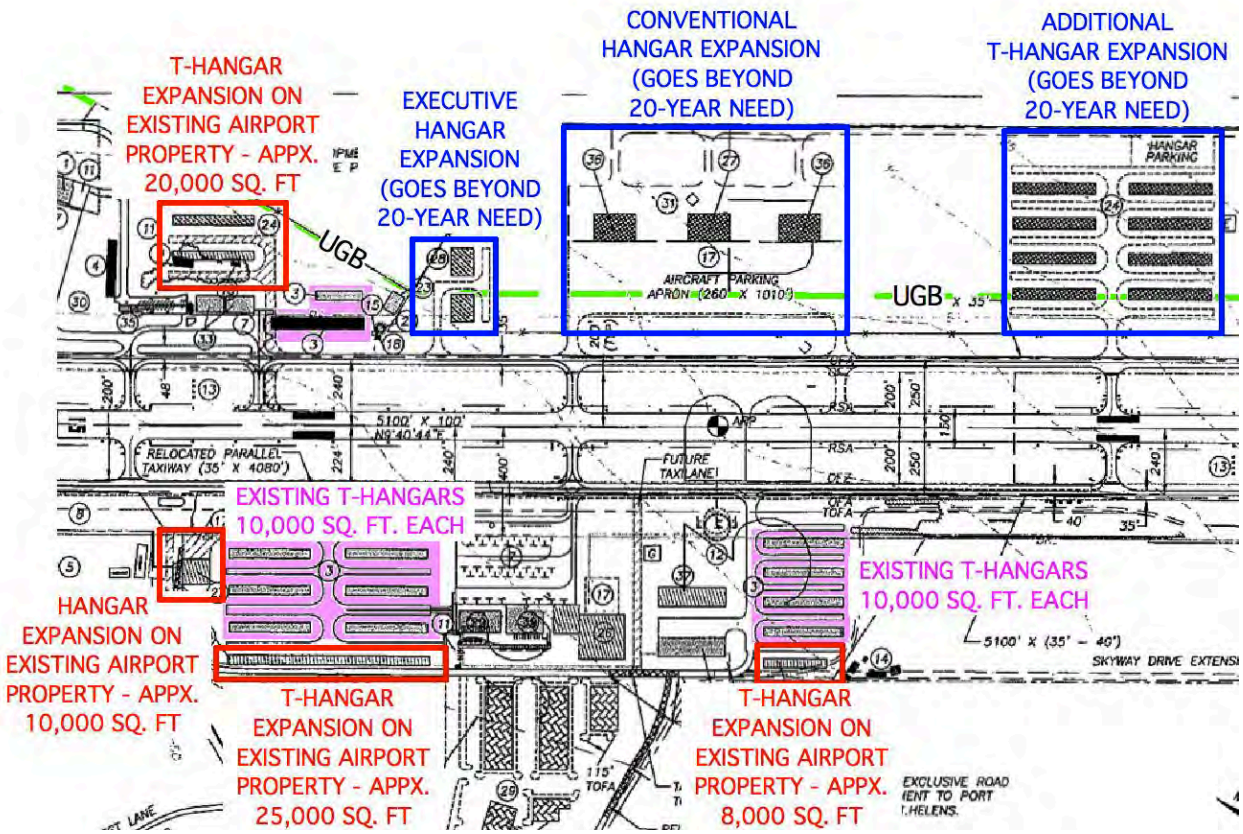
[38] See Table 2H on Page 2-13 of the *Airpark Plan.* This forecast was also approved by the Federal Aviation Administration and the Oregon Department of Aviation; see page 2-1.

3D on page 3-11, reproduced below. Note that there is no need shown for additional executive hangar space, and a slight decrease in the need for conventional hangar space. The only need shown is for additional T-hangar space, and some associated maintenance area. Over the 20-year planning period, the overall need for hangar space increases by about 52,000 square feet.

TABLE 3D
Aircraft Storage Requirements
Scappoose Industrial Airpark

			Future Requirements		
	Currently Available	**Current Need**	**Short-Term**	**Intermediate Term**	**Long-Term**
Aircraft to be Hangared		130	144	158	181
T-hangar Positions		120	128	138	152
Executive Hangar Positions		5	8	9	13
Conventional Hangar Positions		5	8	11	16
Hangar Area Requirements (s.f.)					
T-hangar Area	129,900	141,600	149,000	160,100	176,000
Executive Hangar Area	31,200	13,200	20,400	21,600	30,000
Conventional Hangar Area	40,800	12,000	20,400	27,600	40,800
Total Maintenance Area	30,300	26,000	28,500	31,400	37,000
Total Hangar Area (s.f.)	232,200	192,800	218,300	240,700	284,300

Section 4 of the *Airpark Plan* contains a map titled "Airport Layout Plan" which details planned improvements. Below is an annotated clipping from the Layout Plan showing just the hangar improvements. Identification of each improvement was done using the included key (not shown on the clipping). Approximate sizes of the improvements were identified using references found on page 3-16 and the included scale (also not shown). Red portions show hangars that will be located inside the current airport boundary (and UGB). Blue portions show hangers that would be located outside the UGB.



The combined capacity of the red-labeled hangers is approximately 62,000 square feet – more than is needed to meet the identified 20-year demand. What, then, is the purpose of the blue-labeled improvements? The *Airpark Plan* explains that in fact, the hangar construction laid out in the plan is intended to provide additional capacity, above and beyond that required to meet the 20-year need.[39]

Many of the blue-labeled hangers provide additional executive and conventional space, but as noted above, there is actually no additional need for either of these over the entire 20-year period. There is also no need for the blue-labeled T-hangar space, because T-hangar space needs can be fully met on land already inside the UGB, via the red-labeled improvements. We can find nothing in the record that establishes a bona fide need for the blue-labeled hangars expansions. We are unsure that even the red-labeled hangars are truly needed; comparison of the Layout Plan

[39] As noted earlier, the *Airpark Plan* relies on a 20-year forecast that predicts based aircraft will increase from 140 to 195 planes, an increase of 55 planes over the planning period. However, the hangar improvements are actually based on a much higher, speculative growth scenario that envisions an increase to 309 planes – an increase of 169 planes, more than three times as many as the adopted 20-year forecast predicts. See *Airpark Plan* page 3-16: "While the proposed hangar developments for Scappoose Industrial Airpark exceed the projected demand in the long term, additional factors were considered. For instance, the selected forecast, which was a mid-range forecast, assumes 195 based aircraft by the end of the planning period. However, the high end of projected based aircraft was also examined and yields as many as 309 based aircraft by the end of the planning period, which would warrant additional aircraft storage." Since this high-end growth scenario is not the *Airpark Plan's* selected forecast, it does not represent the actual 20-year need. There is also no evidence that actual growth at the airport since adoption of the *Airpark Plan* has exceeded the adopted forecast.

and the aerial photo attached to the decision as Appendix 1, Map 4 shows that to date, the airport has declined to construct <u>any</u> of the new T-hangars described in the *Airpark Plan* (Rec. 265).

Although the *Airpark Plan* considers additional improvements that might be needed under an alternate growth scenario that greatly exceeds the adopted 20-year based aircraft forecast, the UGB cannot be expanded to accommodate those additional contemplated improvements. UGB expansions must be based on identified 20-year needs.[40]

<u>Remedy</u>: Remand the *EOA* with instructions to remove the 40 acres for hangar expansion from the claimed land need.

V. INDUSTRIAL LAND INVENTORY

Objection 11: The *EOA* violates OAR 660-009-0015(3), OAR 660-024-0050(1) and (4), Goal 14, Goal 2, adequate factual base, and is not supported by substantial evidence in the whole record, because its inventory fails to include all of the serviceable, industrially designated land already inside the UGB.

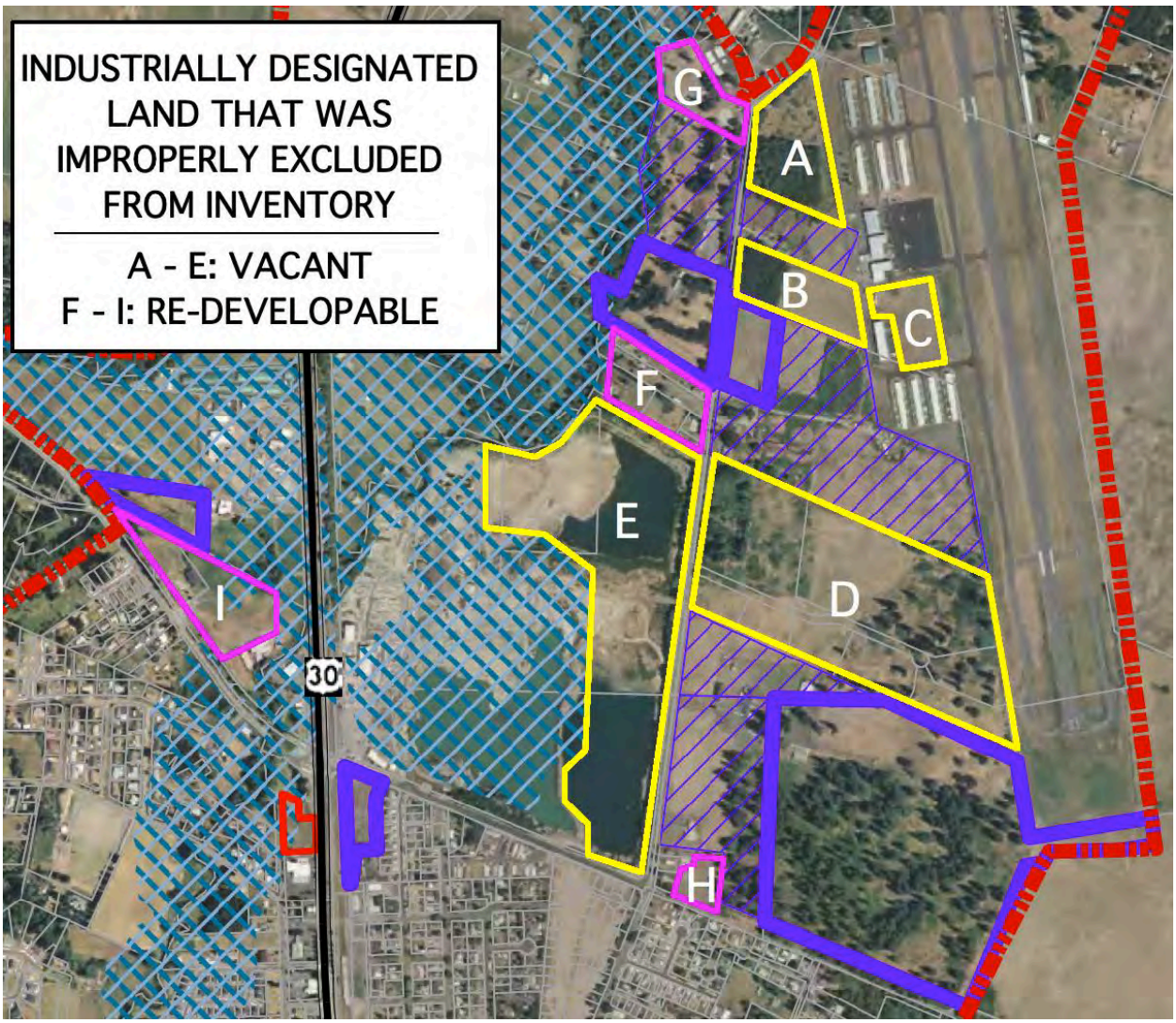
The below aerial photo is taken from the January 14, 2010 Winterbrook Planning memo titled "Scappoose Draft Vacant and Potential Redevelopment Lands," which is attached to the decision as Appendix 1, Map 4 (Rec. 265). It illustrates the *EOA's* inventory of vacant and re-developable industrial sites: vacant land outlined in purple, and re-developable land denoted with purple hatching. Together, ten sites totaling 153 acres were inventoried.

The photo is also annotated with yellow borders around five areas (labeled A through E) that we contend should have been included in the vacant industrial land inventory, and with pink borders around four areas (labeled F through I) that we contend should have been included in the re-developable industrial land inventory. The improperly excluded areas appear to contain at least 130 acres of serviceable, industrially designated land.

---

[40] OAR 660-024-0040(1) provides in part: "The UGB must be based on the adopted 20-year population forecast for the urban area described in OAR 660-024-0030, and must provide for needed housing, employment and other urban uses such as public facilities, streets and roads, schools, parks and open space over the 20-year planning period consistent with the land need requirements of Goal 14 and this rule." The term "public facilities," as it is used in Goal 14, includes transportation facilities. *Concerned Citizens v. Jackson County,* 33 Or LUBA 70 (1997).

Additionally, OAR 660-024-0040(7) provides in part: "The determination of 20-year land needs for transportation and public facilities for an urban area must comply with applicable requirements of Goals 11 and 12, rules in OAR chapter 660, divisions 11 and 12, and public facilities requirements in ORS 197.712 and 197.768." OAR 660-013-0040(5)(a) and (b) require that expansion of existing airport uses be based on "the projected needs for such uses over the planning period" and "economic and use forecasts supported by market data."



All of these areas are inside the UGB, are designated for industrial use, and are already served with water, sewer, storm drainage and major collector street infrastructure.[41]

The decision does not explain why vacant areas A through E should be excluded from inventory. The *Airpark Plan* specifically designates area A for development as an industrial park;[42] it designates Area C for expansion of existing private businesses.[43] Areas B and D contain several large, serviced industrial parcels.

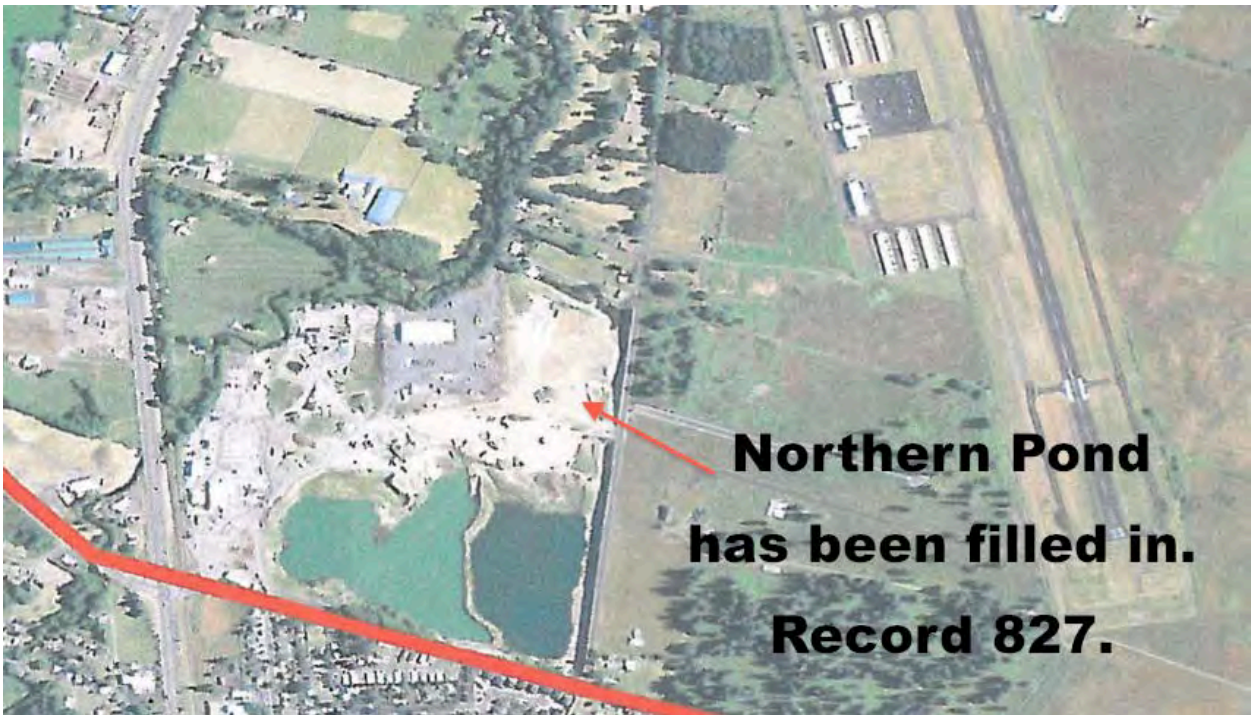
---

[41] See Figures 1-4 of the *Scappoose UGB Infrastructure Report*, Appendix 3 to the decision (Rec. 308-311).

[42] From page 3-17 of the *Airpark Plan:* "Immediately adjacent to Scappoose Industrial Airpark, the Port of St. Helens owns approximately 20 acres of land that has been identified as having potential for expanded business development. ***A Master Plan for Scappoose Airpark's Industrial Business Park was completed by CIDA in April 2001 and outlined a number of alternatives. The selected plan (Plan G)…was accepted by the Board of Commissioners and the Port of St. Helens *** As shown on Exhibit 3C**,** Plan G proposes a number of buildings for industrial use…" The referenced Exhibit 3C, and the Layout Plan in Chapter 4, both show the entire Area A covered with future industrial buildings.

[43] The Airpark Plan's Layout Plan shows this area designated for expansion of Oregon Aero and Sherpa Aircraft.

Area E is in the process of being reclaimed; the northern pond is already filled in and there is no evidence to indicate that the remainder will not be reclaimed as well, within the 20-year planning period. Below is an aerial photo of Area E (Rec. 827).



Developed areas F through I were also excluded without adequate reasons. Page 3 of the Winterbrook memo attached to the decision as Appendix 1 states, "Winterbrook assumed that non-vacant Industrial tax lots 5 acres or larger, with residential or farm improvements, would qualify as likely to redevelop during the planning period." (Rec. 256) But this is not a valid screening test to determine the likelihood of re-development. Size alone is not sufficient to dismiss developed parcels without further explanation.

In fact, Winterbrook's re-development test is almost identical to the definition of "vacant land" under OAR 660-009-0005(14)(b): "Equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements." It is apparent from the above aerial photo that areas F through I are only sparsely developed with improvements. Winterbrook's analysis method likely misidentifies land as re-developable that is actually "vacant" under Goal 9, while failing to identify re-developable land that is in parcels smaller than five acres.

Under OAR 660-009-0005(1), "Developed Land" is "non-vacant land that is likely to be redeveloped during the planning period." Additional analysis, such an evaluation of the age, extent, type and value of the improvements, is needed before conclusions may be drawn about the redevelopment potential of the parcels in areas F through I. Depending on the outcome of such an analysis, these areas may be found likely to re-develop over the 20-year planning period.

Remedy: Remand the *EOA* with instructions to either include areas A through I in the inventory of vacant and re-developable industrial land, or provide additional evidence and findings clearly demonstrating why these lands cannot accommodate any new industrial development.

VI. CONCLUSION

We respectfully ask that you remand this decision with direction to:

- Recalculate the baseline 2010 employment estimate using current data.

- Revise the employment forecast downward, in light of:
  - a) Previously unconsidered 2002, 2008 and 2009 Scappoose employment data
  - b) Portland MSA historic trends
  - c) OED and Portland MSA employment forecasts
  - d) Historical Scappoose employment capture rates
  - e) Existing vacant industrial land capacity in Scappoose
  - f) Conflict between employment forecast and adopted population forecast

- Properly account for home occupations.

- Properly allocate Other Services jobs to commercial and industrial land categories.

- Remove claimed need for 10+ acre sites, or provide additional evidence to support.

- Remove the 50 acres for runway expansion from the claimed land need.

- Remove the 40 acres for hangar expansion from the claimed land need.

- Include areas A through I in the inventory of vacant and re-developable industrial land, or provide evidence that these lands cannot accommodate any new industrial development.

Thank you for consideration of our comments.

Sincerely,

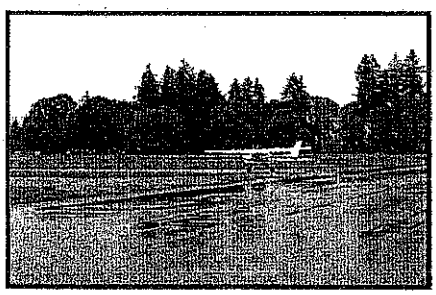
Mia Nelson
for 1000 Friends of Oregon
220 East 11th Avenue, Suite 5
Eugene, OR 97401

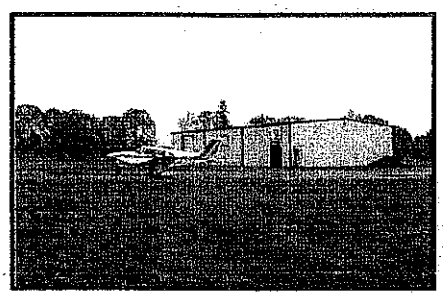
Attachment: 2004 Airpark Master Plan Update for Scappoose Industrial Airpark

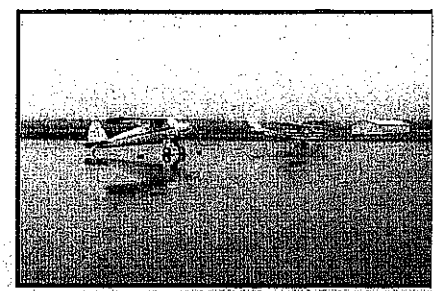
cc: Anne Debbaut, DLCD, anne.debbaut@state.or.us
Brian Varrichionne, City of Scappoose, brianvarricchione@ci.scappoose.or.us
Todd Dugdale, Columbia County, todd.dugdale@co.columbia.or.us

SCAPPOOSE

INDUSTRIAL AIRPARK







Airport Master Plan

AIRPARK MASTER PLAN UPDATE

for

SCAPPOOSE INDUSTRIAL AIRPARK
Scappoose, Oregon

Prepared For The
PORT OF ST. HELENS

By
W&H PACIFIC
9755 SW Barnes Rd., Suite 300
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In Association With
COFFMAN ASSOCIATES, INC.
237 N.W. Blue Parkway, Suite 100
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September 2004

PORT OF
ST. HELENS

TABLE OF CONTENTS

CONTENTS

SCAPPOOSE INDUSTRIAL AIRPARK
Scappoose, Oregon

AIRPARK MASTER PLAN UPDATE

Chapter One
INVENTORY

INTRODUCTION 1-1
LOCATION AND GEOGRAPHY 1-1
LOCAL HISTORY AND COMMUNITY PROFILE 1-1
POPULATION AND ECONOMIC GROWTH 1-2
ACCESS TO THE AIRPORT 1-2
AIRPORT ADMINISTRATION 1-2
AIRPORT ROLE 1-2
AIRPORT FACILITIES 1-3
- Runways 1-3
- Taxiways and Taxilanes 1-3
- Aprons and Aircraft Parking 1-3

LANDSIDE FACILITIES 1-4
- Fixed Base Operators 1-4
- Internal Circulation, Access and Parking 1-4

AIRFIELD SUPPORT FACILITIES 1-5
- Security Fencing and Gates 1-5
- Aircraft Rescue and Firefighting (ARFF) 1-5
- Fueling Facilities 1-5
- Airport Maintenance 1-5
- Utilities 1-5
- Navaids 1-5

Chapter One (Continued)

LIGHTING AND SIGNING 1-6
AIR TRAFFIC ACTIVITY 1-6
Based Aircraft and Operations 1-6
AIRSPACE 1-7
Part 77 Imaginary Surfaces 1-7
Airport Traffic Patterns 1-8
EXISTING LAND USE AND ZONING 1-8
On-Airport Land Use 1-8
Wetlands 1-8
Wind and Meteorological Data 1-8
Off-Airport Land Use 1-9

Chapter Two
AVIATION DEMAND FORECASTS

NATIONAL AVIATION TRENDS 2-2
General Aviation 2-2
FORECASTING APPROACH 2-4
SOCIOECONOMIC PROJECTIONS 2-5
Population 2-5
Employment 2-6
Income 2-7
STATE AVIATION SYSTEM PLAN 2-7
LOCAL SERVICE AREA 2-8
BASED AIRCRAFT FORECASTS 2-8
Based Aircraft Fleet Mix 2-12
OPERATIONS PROJECTIONS 2-14
Peaking Characteristics 2-15
SUMMARY 2-16

Chapter Three
FACILITY REQUIREMENTS/ALTERNATIVES

AIRFIELD REQUIREMENTS 3-2
Airfield Design Standards 3-4

Chapter Three (Continued)

Runways 3-4
Taxiways 3-7
Navigational And Approach Aids 3-7
Airfield Marking, Lighting, And Signage 3-8
LANDSIDE REQUIREMENTS 3-9
Hangars 3-10
Aircraft Parking Apron 3-11
Vehicle Parking 3-12
SUPPORT REQUIREMENTS 3-12
Aircraft Rescue And Firefighting 3-13
Airport Maintenance/Storage Facilities 3-13
Fuel Storage 3-13
AIRPORT DEVELOPMENT ALTERNATIVES 3-13
Background 3-14
Airfield Alternatives 3-14
Landside Alternatives 3-15
INDUSTRIAL BUSINESS PARK 3-17
SUMMARY 3-17

Chapter Four
AIRPORT PLANS

INTRODUCTION 4-1
AIRPORT LAYOUT DRAWINGS 4-1
Cover Sheet 4-1
Airport Layout Plan 4-2
Airport Airspace Plan 4-5
Approach Zone Profiles and Runway Protection Zone Plans & Profiles 4-6
Land Use Plan 4-6
LAND USE COMPATIBILITY 4-6
Runway Protection Zones 4-6
Airport Airspace Obstruction Protection and Land Use Compatibility Adjacent to the Airport 4-7
Airport Property Zoning 4-9

EXHIBITS

1A LOCATION MAP ..... after page 1-2
1B EXISTING FACILITIES ..... after page 1-4
1C AIRPORT LAYOUT DIMENSIONS AND PAVEMENT CROSS SECTIONS ..... after page 1-4
1D PAVEMENT CONDITIONS IN AUGUST 2001 ..... after page1-4
1E INSTRUMENT APPROACH PROCEDURES – VOR/DME OR GPS A ..... after page 1-6
1F INSTRUMENT APPROACH PROCEDURES – LOC/DME RWY. 15 ..... after page 1-6
1G PART 77 ..... after page 1-6
1H ZONING MAP ..... after page 1-8

2A U.S. ACTIVE GENERAL AVIATION FORECASTS ... after page 2-4
2B BASED AIRCRAFT FORECAST SUMMARY ..... after page 2-12
2C FORECAST SUMMARY ..... after page 2-16

3A AIRPORT REFERENCE CODES ..... after page 3-4
3B LANDSIDE DEVELOPMENT ALTERNATIVE ..... after page 3-16
3C SCAPPOOSE INDUSTRIAL BUSINESS PARK (PLAN G) ..... after page 3-18

AIRPORT LAYOUT DRAWINGS (1 through 6) ..... after page 4-9
EXHIBIT A, PROPERTY MAP ..... after page 4-9
4A NOISE CONTOURS, 2002 AND 2007 ..... after page 4-9
4B LAND USE COMPATIBILITY GUIDELINES ..... after page 4-9
4C CAPITAL IMPROVEMENT PROJECTS ..... after page 4-9

ATTACHMENTS

A. FUNDING AND AIRPORT REVENUE ANALYSIS

B. AIRPORT COMPLIANCE

C. FAA COMMENTS

PORT OF
ST. HELENS

Chapter One

INVENTORY

PORT OF ST. HELENS

INVENTORY

INTRODUCTION

The first part of the master planning effort is to update the inventory. The inventory chapter will summarize economic and population changes around the airport, as well as the airport facilities, and operations information. By establishing a thorough and accurate inventory, an appropriate forecast, financial plan and airfield and landside development can be determined.

LOCATION AND GEOGRAPHY

Scappoose Industrial Airpark is located in the City of Scappoose, Oregon in Columbia County. The City is located along Highway 30 in the northwest corner of Oregon, 20 miles from downtown Portland. The eastern edge of the City borders the Multnomah Channel with rolling hills and the river valley, while the western edge is bordered by forested hillsides. The City is 42 feet above sea level. See **Exhibit 1A** for a location map.

The City's average annual low temperature is 39 degrees F and the average annual high temperature is 68.4 degrees F. The area receives approximately 60 inches of rain per year over approximately 152 days.

LOCAL HISTORY AND COMMUNITY PROFILE

The City of Scappoose was originally inhabited by the Chinook Indians and

became a hub for traders in the 1700s. Over the years, Scappoose has offered many occupations from logging to dairy farming to gravel mining. Now, many of Scappoose's residents make their living through lumber, mining, retail trade, and manufacturing. The City's five largest employers are Scappoose School District, Fred Meyer, Taylormade Products, Inc., West Coast Shoe Company, and OS Systems. It is also common for City of Scappoose residents to commute to the Portland/Hillsboro area for work.

The median household income in Scappoose is $55,500. The median age of the City residents is 45.1 years.

POPULATION AND ECONOMIC GROWTH

The City of Scappoose currently has a population of 5200 people. The City has experienced an average annual growth rate of 3.5 percent over the past decade. Population increases over the last 20 years are shown in **Table 1A, Population**. The City is planning for a future of growth, based on its variety of recreational opportunities and rich history. The Scappoose Business Development Committee is in the process of developing a "Town Center Master Plan" to enhance and guide the City's growth.

ACCESS TO THE AIRPORT

Airport access is gained from Highway 30 onto either Columbia Avenue or West Lane Road. Signs direct drivers to the roads leading to the various areas of the airport.

Table 1A, Population

	1980	1990	1998	2001
City of Scappoose	3,213	3,529	4,855	5,160
Columbia County	35,646	37,557	42,300	44,300

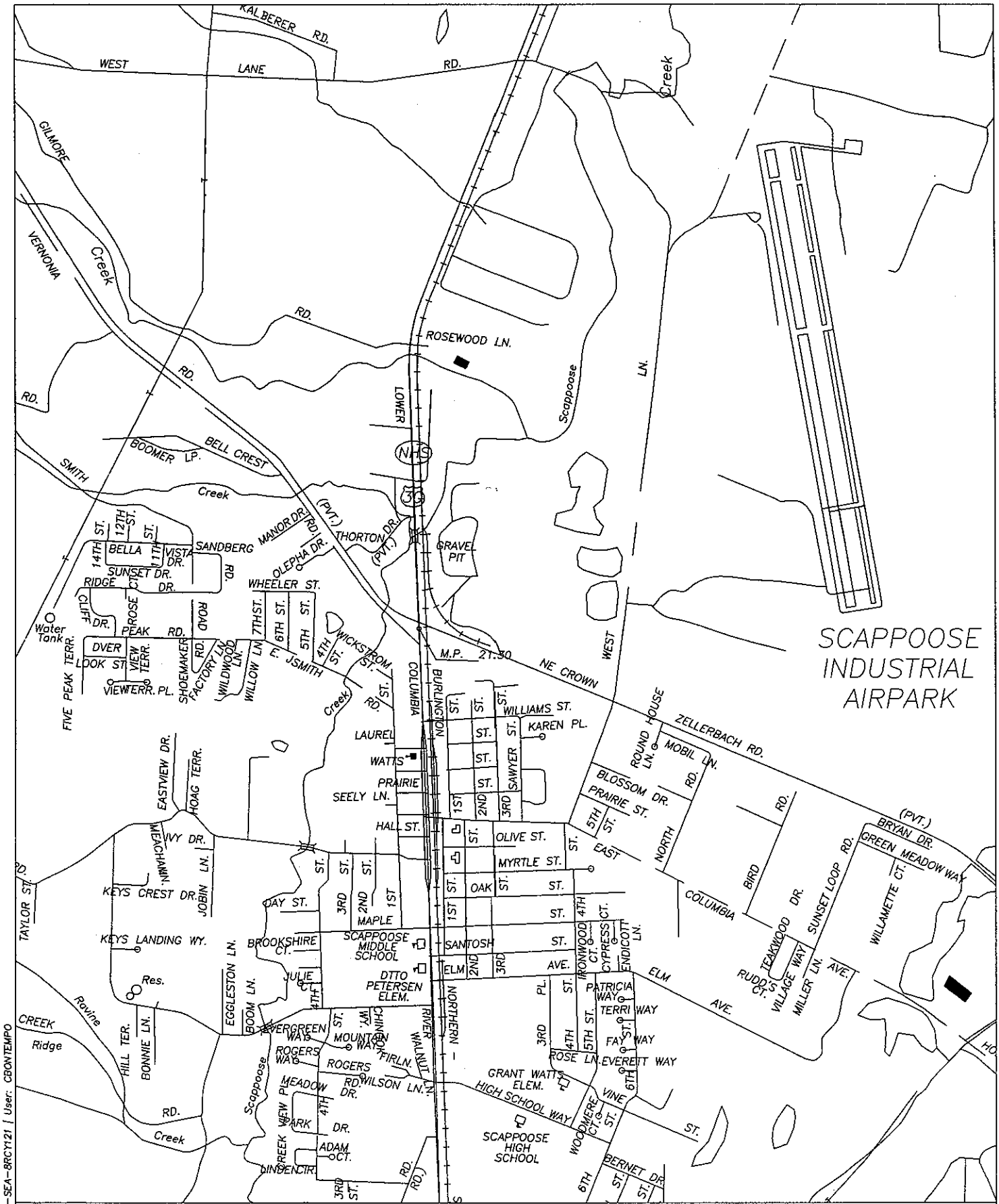
Taxi services, both scheduled and on-call, are available. Greyhound operates regional and interstate bus service from Highway 30. Portland Western Railroad passes through the City of Scappoose along Highway 30 providing freight service. Nearby St. Helens and Warren have marinas for small boats and deepwater shipping operates through the nearby Columbia River Channel.

AIRPORT ADMINISTRATION

The airport is owned and operated by the Port of St. Helens.

AIRPORT ROLE

Historically, the airport has been primarily a base for local recreational users. With increased growth in the northwest corner of Oregon, and other nearby airports getting busier, Scappoose has begun to attract more itinerant and local aircraft from the surrounding areas. Scappoose is currently the second busiest airport without an air traffic control tower in the state of Oregon and continues to grow.



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PORT OF ST. HELENS
SCAPPOOSE INDUSTRIAL AIRPART
LOCATION MAP
EXHIBIT 1A

OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
N.T.S	30398	EXHIBIT-1A.DWG	1A

Office: SEATTLE | System: WHP-SEA-8RCY121 | User: CBONTEMPO

The State Aviation System Plan has identified Scappoose Industrial Airpark as a Category 2 airport. This means the airport is a business or high activity general aviation airport with over 30,000 operations per year and at least 500 turbine aircraft operations.

Scappoose Industrial Airpark is one of only three airports within a 30 nautical mile radius of the City of Scappoose that offers a runway over 5000 feet in length. This makes this airport ideal for many turbine aircraft and enhances the airport's role as a major local airport in the Portland Metropolitan Area for general aviation.

AIRPORT FACILITIES

RUNWAYS

Scappoose Industrial Airpark has one runway. Runway 15-33 is 5,100 feet by 100 feet, as depicted on **Exhibit 1B**.

The runway was originally built in 1943 at a length of 4000 feet. The runway was extended 1100 feet in 2000. The surface is asphalt concrete and its strength is 30,000 lbs. for single gear aircraft, 50,000 lbs. for dual gear aircraft and 90,000 lbs. for dual tandem gear aircraft. The original pavement section was 2 inches of asphalt concrete, 6-inches of base course and 12-inches of subbase course. The original runway pavement was overlaid with 2.5-inches in 2000. The runway extension, constructed in 2000, has a pavement section of 3 inches of asphalt concrete, 4.5 inches of base course and 7 inches of asphalt concrete millings as subbase course. The runway pavement is in excellent condition. The runway also has a rubberized friction slurry seal coat. Details on the pavement sections and condition are shown in **Exhibits 1C and 1D**.

TAXIWAYS AND TAXILANES

There are two main parallel taxiways, one on either side of the runway. Taxiway A is located on the east side of the airport and Taxiway B is on the west side. There are five to six connector taxiways on each side of the runway. The taxiways all have an asphalt concrete surface course and are generally in very good to excellent condition. The exception to this is Taxiway B4, with pavement only in fair condition.

Taxilanes throughout the airport are also constructed with asphalt concrete surface course. For detailed information on the pavement sections and conditions of the taxiways and taxilanes see **Exhibits 1C** and **1D**.

APRONS AND AIRCRAFT PARKING

There are two areas on the airport where aircraft tiedowns are provided. On the east side of the airport, adjacent to the parallel taxiway are 10 tiedowns. An apron on the west side of the airfield, approximately 440 feet by 325 feet, contains 30 tiedowns. Additional tie-downs also exist on this apron, but the striping has been removed to allow for vehicle parking spaces.

A building of shed hangars with 5 aircraft bays, located in the northeast corner of the airport, is planned for removal in the near future. Other leasable hangars on the airport include 100 T-hangars in 10 buildings on the west side of the airport. The east side of the airport also has 15 T-hangars and one large, single unit hangar. Tiedown, hangar and land lease fees are shown in **Table 1B** below. Other buildings on the airport are owned by a combination of Fixed Base Operators (FBO's). For detailed information on the hangars and buildings at the airport see **Exhibit 1B, Existing Facilities**.

Table 1B, Airport Rates and Fees

	Cost Per Month
Open Hangar Building	$60.00
East Side Ten Unit Hangar Building	$100.00
East Side Five Unit Hangar Building	$113.00
West Side Interior Hangars	$127.00
West Side End Hangars	$150.00
West Side Interior Hangars – Building W-9	$150.00
West Side End Hangars – Building W-9	$170.00
West Side Interior Hangars – Building W-10	$165.00
West Side End Hangars – Building W-10	$185.00
Tie-Down	$21.00
Land Lease	$0.015 per sf and $0.18 per sf per year

LANDSIDE FACILITIES

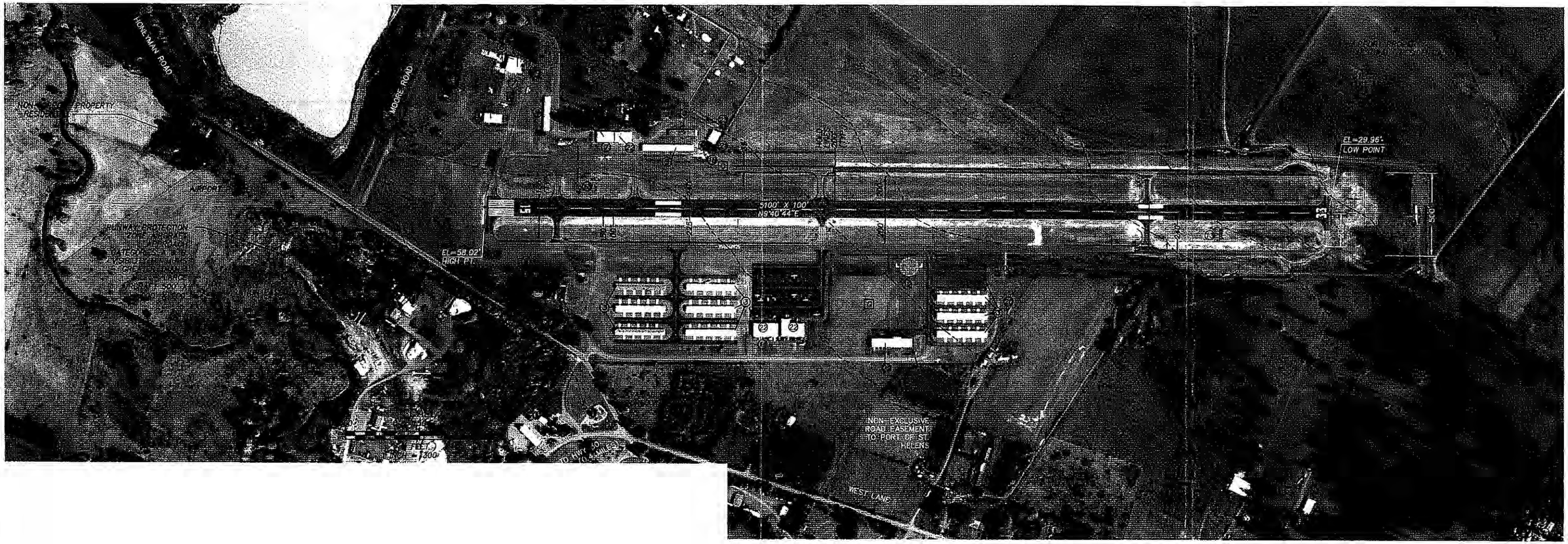
FIXED BASE OPERATORS

The primary FBO at Scappoose Industrial Airpark is Transwestern Aviation. Other FBO's include Sherpa Aircraft Manufacturing, Sport Copter, Inc., Oregon Aero, Composites Unlimited, Inc., and the Northwest Antique Airplane Club. Oregon Aero manufactures helmets and aircraft seats. Sport Copter creates kits for experimental helicopters. Sherpa also develops kit aircraft. Composites Unlimited manufactures composite components for aircraft. Transwestern Aviation operates the fueling facilities at the airport.

Transwestern Aviation, Inc. operates a through-the fence operation at Scappoose Industrial Airpark. Their facilities are on the east side of the airport. They provide aircraft fueling services.

INTERNAL CIRCULATION, ACCESS AND PARKING

Vehicle and pedestrian access to the airfield is generally limited by a number of fences around the airport, though portions of the east side of the airport do not have fencing. Vehicular traffic must get around the airport via the taxiways and aprons. Otherwise, access to the west side of the airport



NOTES

- [A] Existing coordinate data from National Ocean Service Obstruction for Scappoose Industrial Airpark (Nov. 1994). Future coordinates calculated from existing. Horizontal Datum NAD 83 Vertical Datum NGVD 88
- [B] A topographic survey has not been performed. Brass cap set in concrete.
- [C] Power supplied to airport by Columbia River P.U.D.
- [D] Source: FAA Airport Master Record (Form 5010).
- [E] Clear slope measured on Part 77 approach surface. Road clearance will not require a threshold displacement if approach minimums are 1.0 mile or greater.
- [F] No wind data is available. Wind is noted as generally following runway alignment. Northerly and southerly winds occur with approximately equal frequency.
- [G] Currently used for helicopter parking.
- [H] Airport perimeter to be fenced.
- [I] Protected from 100-year flood by levee; subject to possible failure or overtopping during large flood (source; FEMA map).
- [J] Deviations from FAA standards:

  Some hold lines and runway-to-taxiway separation on west side are 15 feet less than 240' standards for a B-II runway.

BUILDING & FACILITIES LEGEND

1	FBO Hangar/Office
2	Other FBO Building
3	T-Hangar Buildings
4	Shed Hangars (To Be Removed)
5	County Park
6	Fuel Island
7	Paved Aircraft Apron
8	Turf Aircraft Parking Area
9	Residence/Garage
10	Mobile Home (To Be Removed)
11	Auto Parking
12	Wind Cone/Segmented Circle
13	Precision Approach Path Indicator
14	Farm Buildings & Residences
15	Storage Shed
16	FBO – Private Property
17	T-Hangar Building/Area
18	Electrical Building
19	Localizer Antenna
20	Automated Surface Observing System
21	Rotating Beacon On Tower
22	Other Commercial Building
23	Shed Hangar Privately Owned

RUNWAY DATA

AIRPORT REFERENCE CODE (CRITICAL AIRCRAFT ARC)			B-II
CRITICAL AIRCRAFT			Small Business Jet
PHYSICAL LENGTH AND WIDTH			5,100' x 100'
EFFECTIVE GRADIENT / MAX. GRADE			0.56%/0.68%
PAVEMENT TYPE			ASPHALTIC CONCRETE
PAVEMENT STRENGTH			SW – 30,000 LBS DW – 50,000 LBS [D]
RUNWAY SAFETY AREA DIMENSIONS			5,700' x 150'
RUNWAY OBJECT FREE AREA			5,700' x 500'
RUNWAY OBJECT FREE ZONE			5,500' x 400'
APPROACH VISIBILITY MINIMUMS			Greater Than 1 Mile
APPROACH TYPE		15	Nonprecision
		33	Visual
APPROACH SLOPE: REQUIRED/CLEAR		15	34:1/17:1
		33	20:1/50+:1
APPROACH AND LANDING AIDS		15	REIL/PAPI/LOC/DME
		33	PAPI
RUNWAY END COORDINATES SEE NOTE [A]	15	Latitude	N45°46'40.41"
		Longitude	W122°51'49.65"
	33	Latitude	N45°45'51.05"
		Longitude	W122°51'35.49"
RUNWAY LIGHTING			MIRL
LINE OF SIGHT			5,100'
RUNWAY MARKING			Nonprecision
WIND COVERAGE			[F]

DRAWING LEGEND

DESCRIPTION	
AIRPORT PROPERTY	
LEASE OR RIGHT-OF-WAY LINE	
AVIGATION EASEMENT	
PAVEMENT (ASPHALT)	
PAVEMENT TO BE REMOVED	
ON-AIRPORT BUILDING	
BUILDING RESTRICTION LINE	BRL
RUNWAY SAFETY AREA	RSA
RWY OBSTACLE FREE ZONE	OFZ
RWY PROTECTION ZONE	RPZ
OBJECT FREE AREA	OFA
TAXIWAY HOLDLINE	
CONTOURS	35
SURVEY MONUMENT [C]	
VEHICLE GATE	
AIRPORT FENCE	

DECLARED DISTANCES TABLE

	15	33
Take-Off Run Available (TORA)	5100	5100
Take Off Distance Av. (TODA)	5100	5100
Accelerate Stop Distance AV. (ASDA)	5100	5100
Landing Distance AV. (LDA)	5100	5100

AIRPORT DATA

AIRPORT ELEVATION (Feet above MSL)		58.02'
AIRPORT REFERENCE POINT [A]	Latitude	N45°46'15.73"
	Longitude	W122°51'42.57"
MEAN MAX. TEMP (Hottest month)		82°
COMBINED WIND COVERAGE	VFR	[F]
	IFR	[F]
AIRPORT REFERENCE CODE		B-II
AIRPORT SERVICE LEVEL (NPIAS)		GENERAL AVIATION
TAXIWAY LIGHTING		REFLECTORS
TAXIWAY MARKING		YES
AIRPORT & TERMINAL NAVAIDS		LOC/DME/PAPI

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK

EXISTING FACILITIES EXHIBIT 1B

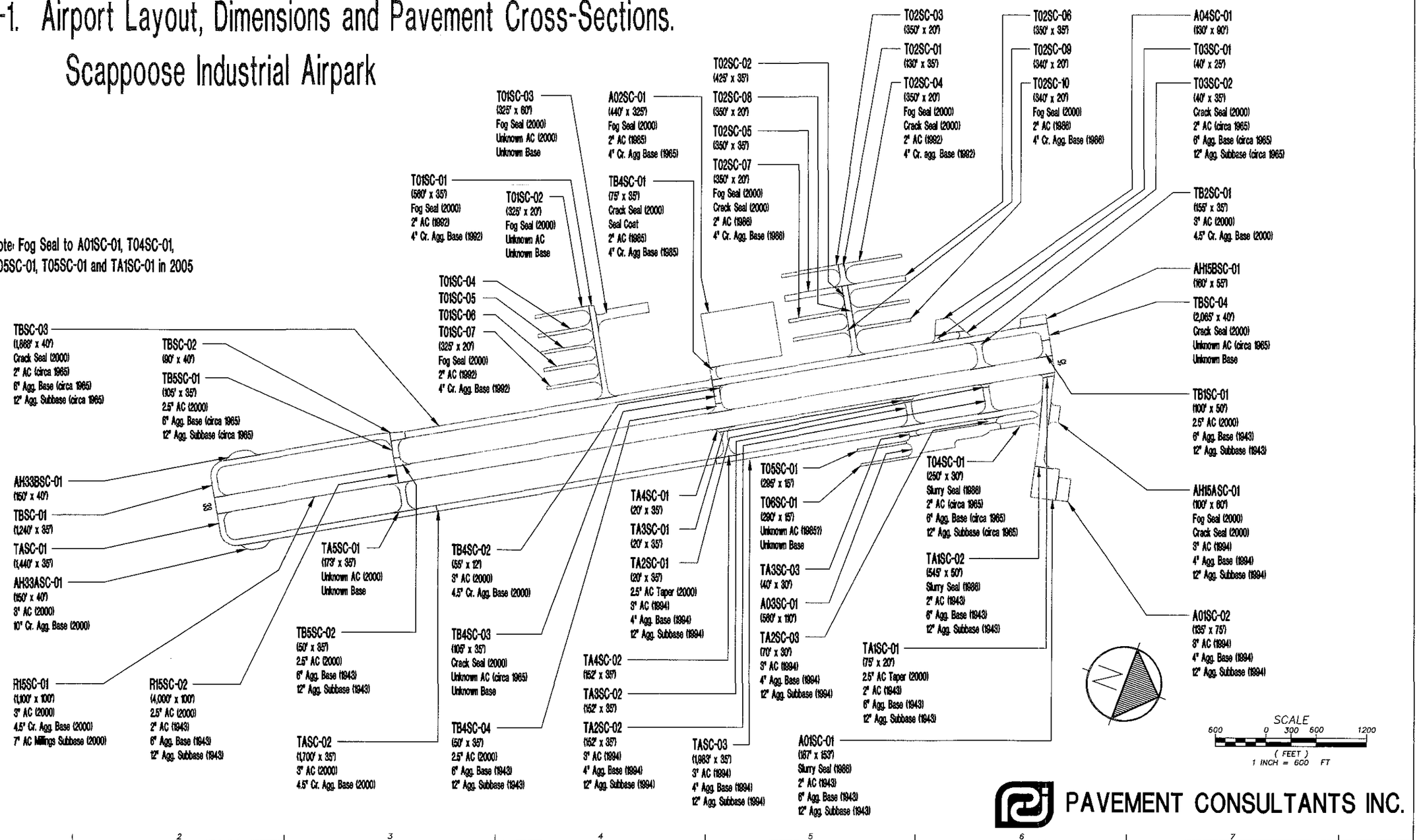
SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
1"=300'	30398	EXHIBIT-1B.DWG	1B

(04.0709.0011) 817425 RUNWAY EXTENSION\AUTOCAD\ALP\ASAALP1.DWG

DWG INDEX: SCAPPOSE ZONEW

Figure SC-1. Airport Layout, Dimensions and Pavement Cross-Sections.
Scappoose Industrial Airpark

Note: Fog Seal to A01SC-01, T04SC-01, T05SC-01, T05SC-01 and TA1SC-01 in 2005



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PORT OF ST. HELENS
SCAPPOOSE INDUSTRIAL AIRPARD

AIRPORT LAYOUT, DIMENSIONS, AND PAVEMENT CROSS SECTIONS

SCAPPOOSE OREGON

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1"=600'	30398	EXHIBIT-1C	1C

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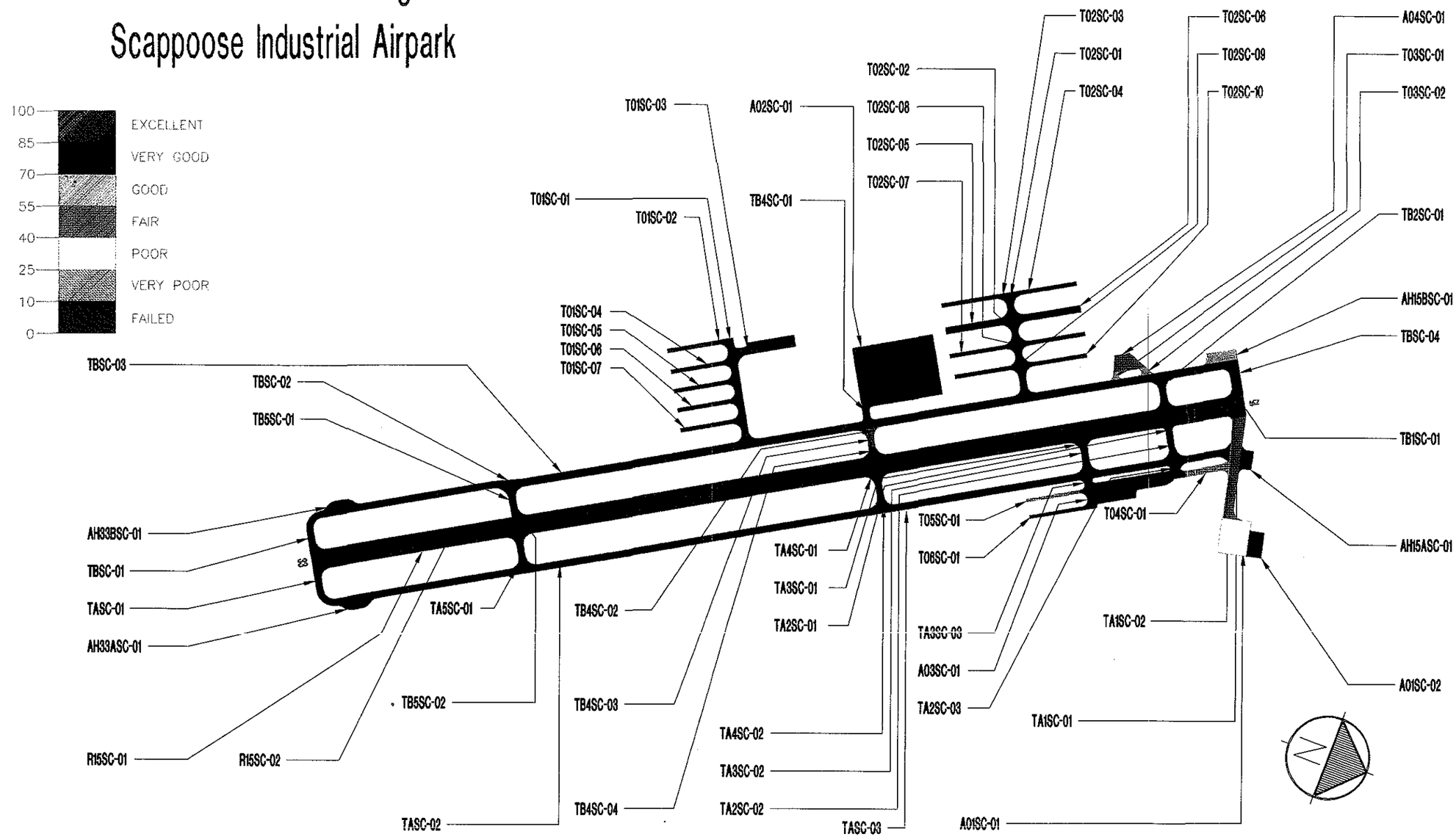
DWG INDEX:
SCAPPOOSE 200NEW

Figure SC-3. Pavement Condition in August 2001.
Scappoose Industrial Airpark



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PORT OF ST. HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
PAVEMENT CONDITIONS
IN AUGUST 2001

SCAPPOOSE OREGO

SCALE:	PROJECT NO.	DRAWING FILE NAME	SHEET
1"=600'	30398	EXHIBIT-1D	1D

Office: SEATTLE | System: WHP-SEA-BRCY121 | User: CBONTEMPO

can be obtained through the perimeter roads. There is no perimeter roadway access to the southern two-thirds of the airport on the east side or to the southern half of the airport on the west side.

Parking is provided adjacent to the buildings occupied by the airport tenants. A total of 146 vehicle parking spaces are available throughout the airport.

AIRFIELD SUPPORT FACILITIES

SECURITY FENCING AND GATES

The airport is almost completely surrounded by fencing with vehicle access gates. The exception is that the majority of the east side of the airport is currently without fencing. The airport is waiting to purchase additional property on the east side before the fence is completed. The fencing is 6 foot chain link with three-strands of barbed wire, except for portions of the north and east side fencing that are three strands of barbed wire on metal posts. There are two vehicle access gates, one on the west side of the airport and one on the east. A third access gate is planned on the east side of the airport near the south end of the runway.

AIRCRAFT RESCUE AND FIREFIGHTING (ARFF)

All Aircraft Rescue and Firefighting services for the Scappoose Industrial Airpark are provided by the City of Scappoose through the Scappoose Rural Fire Protection District. The firehouse is approximately 2 miles from the airport.

FUELING FACILITIES

Transwestern Aviation operates the public fueling facility. 100 low lead (100LL) and jet A fuels are available at the airport.

AIRPORT MAINTENANCE

The Port of St. Helens performs airport maintenance. No maintenance facility is located on the airport property.

UTILITIES

Utilities serving the airport are the Columbia River PUD (electricity), City of Scappoose (water) west side of the airport, and Century Tel (telephone). Airport buildings have on-site septic systems and water is also available on the east side from a well on site. Natural gas is not available at the airport and service is not planned.

NAVAIDS

Airport Navigational Aids, or NAVAIDS, provide electronic navigational assistance to aircraft for approaches to an airport. The Scappoose Industrial Airpark is equipped with one specific NAVAID and uses another from another nearby airport. Approximately 11.4 miles from the air-

port, located at the Battleground Airport, is a Very High Frequency Omnirange (VOR). The VOR provides a nonprecision circling approach to Scappoose Industrial Airpark by directional guidance through an established frequency of 116.60 MHz. Required visibility is a minimum of 1-mile visibility. A GPS overlay is also provided with the VOR approach procedure. Runway 15 has a Localizer (LOC) and Distance Measuring Equipment (DME), which provide guidance for alignment and descent through the use of antennas on the ground transmitting to a receiver antenna on the aircraft. This approach procedure is a straight-in nonprecision approach with 1-mile visibility minimums. See **Exhibits 1E** and **1F, Instrument Approach Procedures**.

Scappoose Industrial Airpark has an Automated Surface Observing System (ASOS) from which the pilots can gain current airport information, such as ambient temperature, wind and visibility. The ASOS is located in the southwest corner of the airport property. The ASOS information is available through a frequency of 135.875 MHz or by calling (503) 543-6401.

LIGHTING AND SIGNING

Runway 15-33 is equipped with Medium Intensity Runway Lighting (MIRL). Runway 15 is equipped with Runway End Identifier Lights (REILs), which are flashing lights on either side of the runway threshold that help to delineate the end of the runway.

A Precision Approach Path Indicator (PAPI) is available on both Runway 15 and Runway 33. PAPIs provide approach path guidance with a series of light units. The four-unit PAPIs at Scappoose Industrial Airpark give pilots an indication of whether their approach is too low, slightly low, too high, slightly high, or path through the pattern of red and white given by the light units.

Scappoose Industrial Airpark currently has no approach lighting systems. A rotating beacon is located on a tower on the east side of the airport. The beacon delineates airport location through the use of 180-degree alternating white and green lights.

The parallel and connector taxiways are equipped with centerline reflectors. There is no edge lighting on the taxiways.

Signing at the airport consists of lighted hold signs.

AIR TRAFFIC ACTIVITY

BASED AIRCRAFT AND OPERATIONS

Based aircraft at the airport have increased, in the past ten years by approximately 30 percent. In 1992, the airport had 106 based aircraft. There are currently 140 based aircraft at the airport. The majority of the aircraft based at the airport are single engine aircraft, with some multi-engine aircraft, ultra-lights, gyrocopters and a jet. See **Table 1C** below for a breakdown of the current based aircraft.

SCAPPOOSE, OREGON.

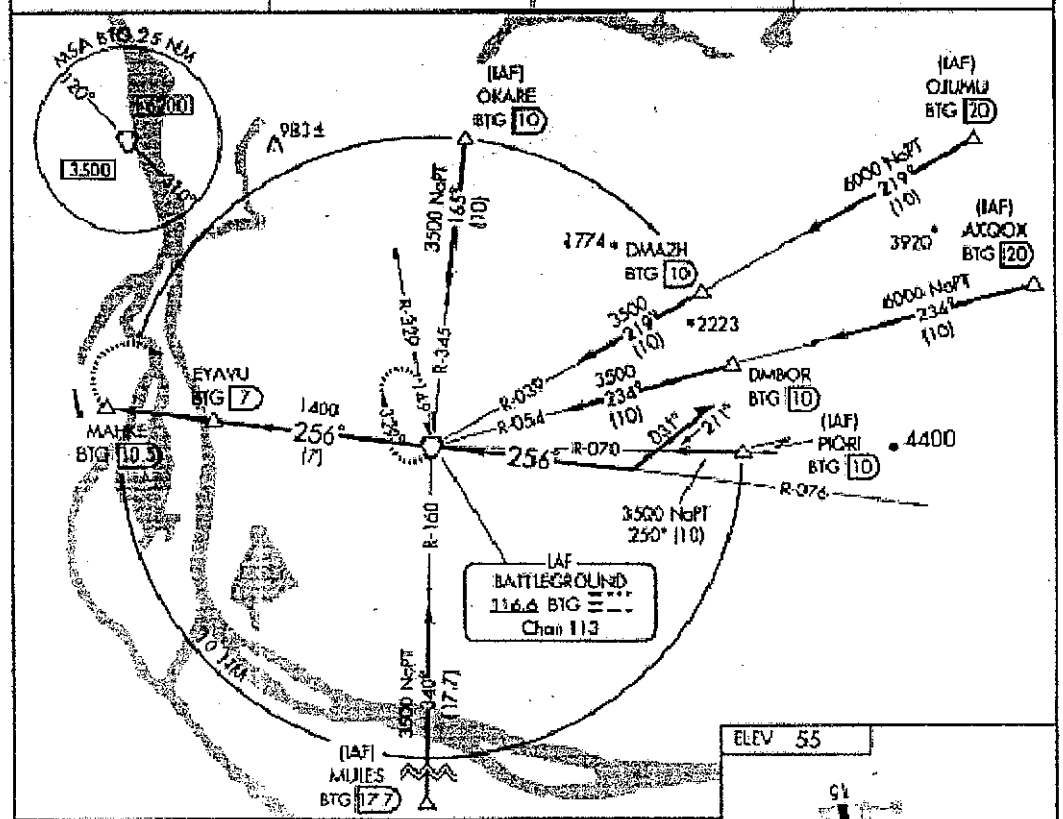
414
AL-631.4 (FAA)

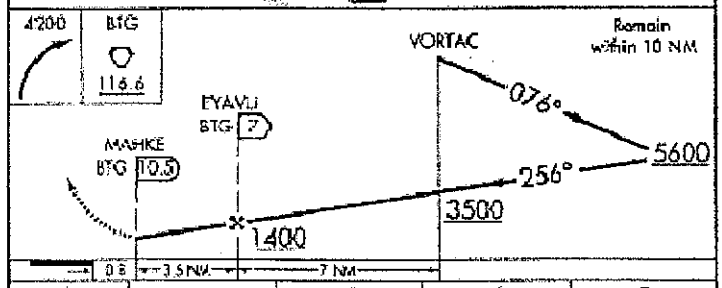
VORTAC BTG 116.8 Chan 113	APP CRS 256°	Rwy ldg N/A TDZE N/A Apt Elev 55

VOR/DME or GPS-A
SCAPPOOSE INDUSTRIAL AIRPARK (SPB)

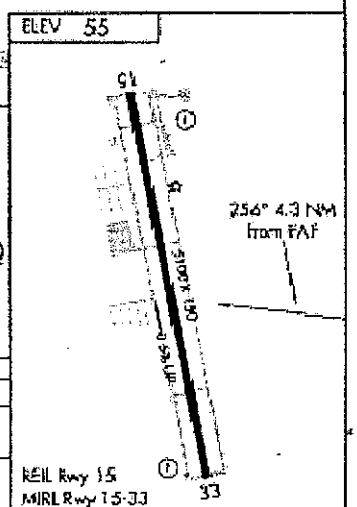
MISSED APPROACH: Climbing right turn to 4200 direct BTG VORTAC and hold.

ASOS	PORTLAND APP CON	CLNC DEL	UNICOM
135.875	124.35 299.2	121.65	122.8 (CTAF)





CATEGORY	A	B	C	D
CIRCLING	680-1 625 (700-1)	940-1¼ 885 (900-1¼)	1000-2¾ 945 (1000-2¾)	1260-3 1205 (1320-2)



Knots	60	90	120	150	180
Min:Sec					

SCAPPOOSE ON
Amdt 2 01 30

45° 46'N - 122° 52'W

SCAPPOOSE INDUSTRIAL AIRPARK (SPB)
VOR/DME or GPS-A

NW-1, 1 NOV 2001

NW-1, 1 NOV 2001

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
INSTRUMENT APPROACH PROCEDURES

SCAPPOOSE OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
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SCAPPOOSE, OREGON

AL-6314 (FAA)

LOC/DME	APP CRS	Rwy ldg 510u
111.1	149°	TDZE 55
Chan 48		Apt Elev 55

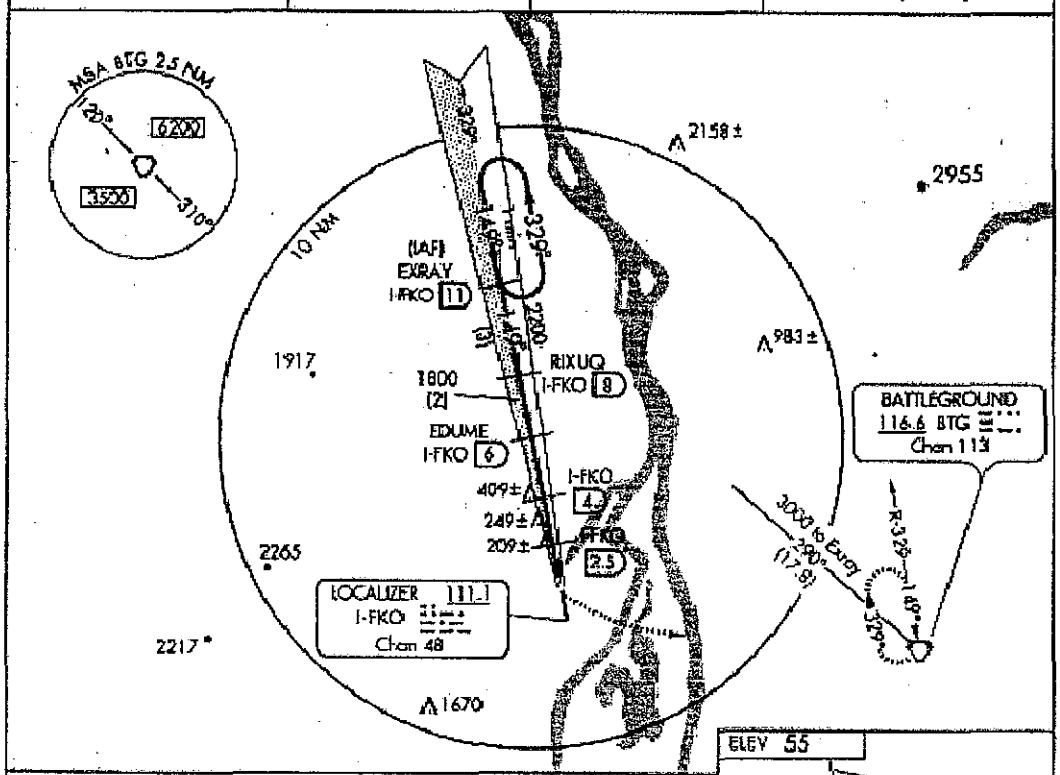
LOC/DME RWY 15

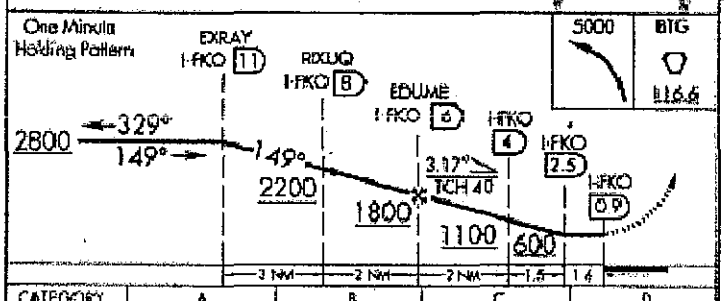
SCAPPOOSE INDUSTRIAL AIRPARK (SPB)

Circling not authorized west of Rwy 15-33.

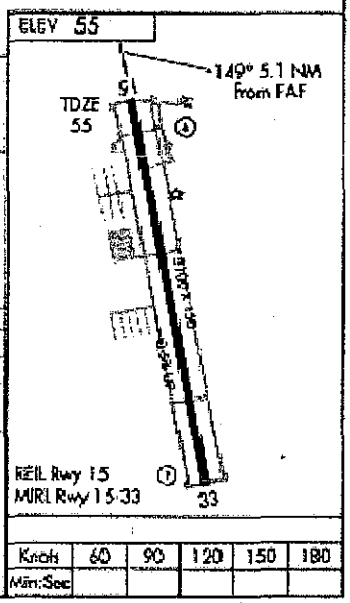
MISSED APPROACH: Climbing left turn to 5000 direct BTG VORTAC and hold.

ASOS	PORTLAND APP CON	CLNC DEL	UNICOM
135.875	124.35 299.2	121.65	122.8 (CTAF)





CATEGORY	A	B	C	D
S-LS	460-1 405 (500-1)		460-1¼ 405 (500-1¼)	
CIRCLING	480-1 425 (500-1)	520-1 465 (500-1)	520-1½ 465 (500-1½)	620-2 565 (600-2)



Knots	60	90	120	150	180
Min:Sec					

SCAPPOOSE, OREGON
Amdt 3 01 365

45°46'N-122°52'W

413

SCAPPOOSE INDUSTRIAL AIRPARK (SPB)
LOC/DME RWY 15

NW-1, 1 NOV 2001

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PORT OF ST.HELENS
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INSTRUMENT APPROACH PROCEDURES
OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK

PART 77
EXHIBIT 1G

SCAPPOOSE OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
1"=4000'	30397	EXHIBIT-1G	1G

Office: SEATTLE | System: WHP-SEA-23PC021 | User: CBONTEMPO

Table 1C, Based Aircraft

Aircraft Type	2000
Single Engine	122
Multi-Engine	5
Jet	1
Helicopter	0
Gyrocopter	6
Military	0
Ultra-light	6

Since there is no air traffic control tower at Scappoose Industrial Airpark, airport operations are based off of approximations from the airport operator. Airport operations have been obtained from the FAA 5010 Form and are as shown in **Table 1D**.

Itinerant operations, defined as operations performed by aircraft that have a destination or origin from another airport, accounted for approximately 46 percent of the total operations in 2002.

Table 1D, Air Traffic Operations

	Itinerant Operations	Local Operations	Total Operations
2002 Operations	27,670	32,485	60,155

Operations activities increase during the spring and summer months, primarily as a result of improved weather conditions.

AIRSPACE

PART 77 IMAGINARY SURFACES

The Part 77 surfaces are the basis for protection of the airspace around the airport. It is ideal to keep these areas clear of obstructions. The Part 77 surfaces for Scappoose Industrial Airpark are as follows (see **Exhibit 1G, Part 77 Imaginary Surfaces**, for more detail):

Primary Surface: A rectangular surface with a width that varies for each runway (centered on the runway centerline) and a length that extends 200 feet beyond each end of the runway. The elevation of the primary surface corresponds to the elevation of the nearest point of the runway centerline. The width of the primary surface is 500 feet for Runway 15/33.

Approach Surface: A surface centered on the extended runway centerline, starting at each end of the primary surface, 200 feet beyond each end of the runway at a width equal to that of the primary surface and an elevation equal to that of the end of

the runway; extending a horizontal distance of 5,000 feet at a slope of 20:1 for visual approaches (Runway 33) and 10,000 feet at a slope of 34:1 for nonprecision approaches (Runway 15) to a width of 1500 feet for Runway 33 and a width of 3500 feet for Runway 15.

Transitional Surface: A sloping 7:1 surface that extends outward and upward at right angles to the runway centerline from the sides of the primary surface and the approach surfaces.

Horizontal Surface: An elliptical surface at an elevation 150 feet above the established airport elevation created by swinging 10,000-foot radius arcs from the center of each end of the primary surface of Runway 15/33.

Conical Surface: A surface extending outward and upward from the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

Obstructions to these surfaces will be addressed in the Airport Plans chapter.

The local airport that has the most effect on Scappoose Industrial Airpark's Airspace is the Portland International Airport. Portland International Airport's Airport Radar Service Area (ARSA) is within six miles of Scappoose. This affects flights out of Scappoose Airpark that are heading the direction of the ARSA because onboard navigational and communications equipment are required to operate in this area. Also, Portland's precision approach for Runway 10 five miles to the south of the airport and both Scappoose and Portland make use of Battleground Airport's VOR. These airspace considerations must be made when looking at any expansion of Scappoose Industrial Airpark relative to airspace improvements.

AIRPORT TRAFFIC PATTERNS

There is a left traffic pattern for Runway 15 and right traffic pattern for Runway 33.

EXISTING LAND USE AND ZONING

ON-AIRPORT LAND USE

The entirety of the 197 acres of airport property is used for aviation purposes. The airport property is zoned as "public use airport". The airport is currently looking to purchase ±60 acres of property on the east side of the runway. The acquisition of this property may allow for the addition of a turf runway to the airport.

WETLANDS

There are no known wetlands on the airport property.

WIND AND METEOROLOGICAL DATA

No specific wind data has ever been obtained for Scappoose Industrial Airpark. It has been noted that wind generally follows the alignment of the runway and that wind from the north

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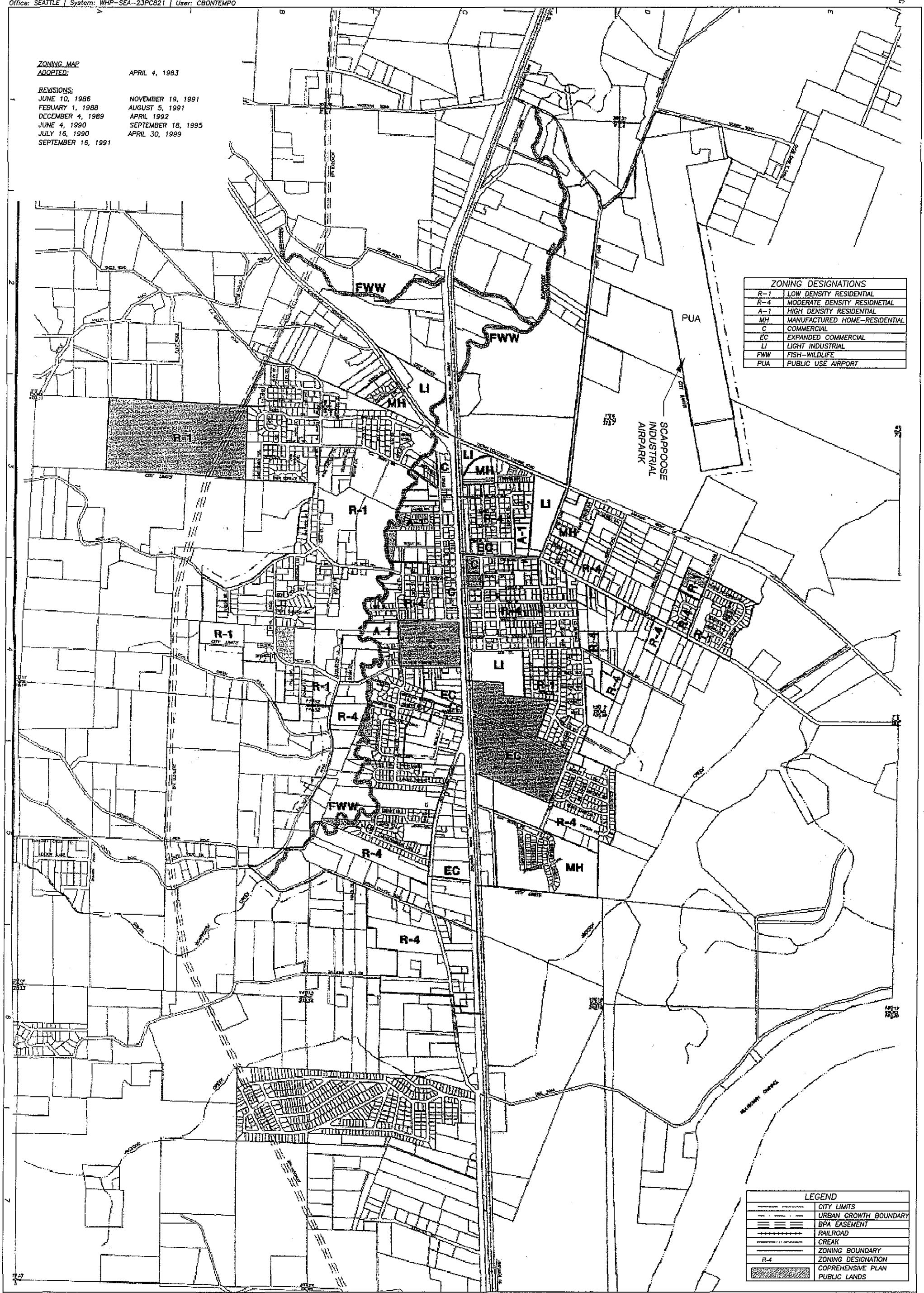

SHEET 1H

DESIGNED BY: CHECKED BY: LAM
DRAWN BY: CMB APPROVED BY:
LAST EDIT: 02/19/03 PLOT DATE: 03/11/03

DATE	BY	REV#	REVISION	CK'D	APPR.

PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
ZONING MAP
EXHIBIT 1H

OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:
N.T.S	30398	EXHIBIT-2H

W&H PACIFIC
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Portland, Oregon 97225
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(503)526-0775
whpacific.com
Planners • Engineers • Surveyors • Landscape Architects

and the south occurs with equal frequency.

Current meteorological data is available from the airport ASOS.

OFF-AIRPORT LAND USE

Zoning

The airport is generally surrounded by agricultural type zoning. The airport property is zoned as public use airport. A variety of levels of residential areas are to the south of the airport. These residential areas are the primary noise sensitive locations around the airport. See **Exhibit 1H, Zoning Map**, for the zoning around the airport.

The City of Scappoose and Columbia County have defined an Airport Overlay Zone. This definition provides the municipalities with a means of protecting the airport airspace and the runway protection zones. The overlay provides height, lighting, emissions and other restrictions to assure that land use and zoning is compatible with this space. The Port of St. Helens also has a number of avigation easements off each end of the runway.

Scappoose Airpark Industrial Business Park

The Port of St. Helens, in cooperation with CIDA, has developed a conceptual master plan for an industrial business park on the west side of the airport, outside airport property. The business park is planned for a 20-acre parcel that is zoned as light industrial. Possible developments include hangars, maintenance facilities, public or private educational facilities and individual sites for aviation-based business. Access to the airport is an important aspect of the business park development. Additional detail can be found in the Port of St. Helens "Master Plan for Scappoose Airpark Industrial Business Park."

PORT OF
ST. HELENS

Chapter Two

AVIATION DEMAND FORECASTS

Aviation Demand Forecasts

PORT OF ST. HELENS

Facility planning must begin with a definition of the demand that may reasonably be expected to occur at the airport over a specific period of time. For Scappoose Industrial Airpark, this involves forecasts of aviation activity through the year 2022. In this report, forecasts of based aircraft, based aircraft fleet mix, and annual aircraft operations will serve as the basis for facility planning.

The resulting forecast may be used for several purposes, including facility needs assessments, airfield capacity evaluation, projected airport revenue analysis, and environmental evaluations. The forecasts will be reviewed and approved by the Federal Aviation Administration (FAA) and the Oregon Department of Aviation, to ensure that they are reasonable projections of aviation activity.

It is virtually impossible to predict, with any certainty, year-to-year fluctuations of activity when looking twenty years into the future. Because aviation activity can be affected by many influences at the local, regional, and national levels, it is important to remember that forecasts are developed to serve only as guidelines and planning must remain flexible enough to respond to unforseen facility needs. To maintain this flexibility, the facility demands must be regularly reviewed.

The following forecast analysis examines recent developments in aviation activity on a national basis, local socioeconomic trends and service areas, as well as changes in forecast indicators at Scappoose Industrial Airpark over the past decade, to provide updated operational projections. The intent is to permit the Port of St. Helens

to make the necessary planning adjustments to ensure the facility meets projected demands in an efficient and cost-effective manner.

NATIONAL AVIATION TRENDS

Each year, the FAA publishes its national aviation forecast. Included in this publication are forecasts for air carriers, regional/commuters, general aviation, air cargo, and military activity. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and by the general public. The current edition when this chapter was prepared was FAA *Aerospace Forecasts-Fiscal Years 2002-2013*, published in March 2002. The forecasts use the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

GENERAL AVIATION

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994 (federal legislation which limits the liability on general aviation aircraft to 18 years from the date of manufacture). This legislation sparked an interest to renew the manufacturing of general aviation aircraft, due to the reduction in product liability, as well as renewed optimism for the industry. The high cost of product liability insurance was a major factor in the decision by many American aircraft manufacturers to slow or discontinue the production of general aviation aircraft.

However, this continued growth in the general aviation industry appears to have slowed considerably in 2001, negatively impacted by the events of September 11th. Thousands of general aviation aircraft were grounded for weeks, due to "no-fly zone" restrictions imposed on operations of aircraft in security-sensitive areas. Some U.S. airports in and around Washington, D.C. and New York City remained closed to visual flight rules (VFR) traffic. This, in addition to the economic recession already taking place in 2001-02, has had a profoundly negative impact on the general aviation industry.

According to the General Aviation Manufacturers Association (GAMA), aircraft shipments were down 13.4 percent for the third quarter of 2001, and 6.2 percent year-to-date. The Aerospace Industries Association of America (AIAA) expects general aviation shipments to decline for the first time since 1994, down 8.8 percent, to 2,556 aircraft. The number of general aviation hours flown is projected to decline by 2.2 percent in 2002, and increase by only 0.4 percent the following year.

At the end of 2001, the total pilot population, including student, private, commercial, and airline transport, was

estimated at 649,957. This is an increase of 3.9 percent, or 24,000 pilots, from 2000. Student pilots were the only group to experience a decrease in 2001, down 6.6 percent from 2000. The number of student pilots is projected to decline by 4.5 percent in 2002, and an additional 1.2 percent the following year. After 2004, the number of student pilots is expected to increase at an average annual rate of 1.0 percent, totaling 90,000 in 2013, which is less than the number recorded in 2000 (93,064).

However, the events of September 11th have not had the same negative impact on the business/corporate side of general aviation. The increased security measures placed on commercial flights has increased interest in fractional and corporate aircraft ownership, as well as on-demand charter flights for short-haul routes. This is reflected in the forecast of active general aviation pilots, excluding air transport pilots, to increase by 54,000 (0.8 percent annually) over the forecast period.

The most notable trend in general aviation is the continued strong use of general aviation aircraft for business and corporate uses. According to the FAA, general aviation operations and general aviation aircraft handled at enroute traffic control centers increased for the ninth consecutive year, signifying the continued growth in the use of more sophisticated general aviation aircraft. The forecast for general aviation aircraft assumes that business use of general aviation will expand much more rapidly than personal/sport use, due largely to the expected growth in fractional ownership.

In 2000, there was an estimated 217,533 active general aviation aircraft, representing a decrease of 0.9 percent from the previous year, and the first decline in five years. **Exhibit 2A** depicts the FAA forecast for active general aviation aircraft in the United States. The FAA forecasts general aviation aircraft to increase at an average annual rate of 0.3 percent over the 13-year forecast period. Single-engine piston aircraft is expected to decrease from 149,422 in the short-term, and then begin a period of slow growth after 2004, reaching 152,000 in 2013. Multi-engine piston aircraft is expected to remain relatively flat throughout the forecast period. Turbine-powered aircraft are expected to grow at an average annual rate of 2.1 percent over the forecast period, faster than all other segments of the national fleet. Turbojet aircraft are expected to provide the largest portion of this growth, with an annual average growth rate of 3.4 percent. This strong growth projected for the turbojet aircraft can be attributed to the growth in the fractional ownership industry, new product offerings (which include new entry level aircraft and long-range global jets), and a shift from commercial travel by many travelers and corporations. Turboprop aircraft, on the other hand, are projected to grow at an average annual rate of only 0.2 percent over the forecast period.

Manufacturer and industry programs and initiatives continue to revitalize the

general aviation industry. Notable initiatives include the "No Plane, No Gain" program promoted jointly by the General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA). This program was designed to promote cost-effectiveness of using general aviation aircraft for business and corporate uses. Other programs, which are intended to promote growth in new pilot starts and to introduce people to general aviation include "Project Pilot," sponsored by the Aircraft Owners and Pilots Association (AOPA), "Be a Pilot," jointly sponsored and supported by more than 100 industry organizations, and "Av Kids," sponsored by the NBAA.

The general aviation industry is also launching new programs to make aircraft ownership easier and more affordable. Piper Aircraft Company has created Piper Financial Services (PFS) to offer competitive interest rates and/or leasing of Piper aircraft. The EAA offers financing for kit-built airplanes through a private lending institution. Over the years, programs such as these have played an important role in the success of general aviation, and will continue to be vital to its growth in the future.

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgement of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast.

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five years. Facility and financial planning usually require at least a ten-year preview, since it often takes more than five years to complete a major facility development program. However, it is not important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors are known to influence the aviation industry and can have significant impacts on the extent and nature of air service provided in both the local and national market. Technological advances in aviation have historically altered, and will continue to change, the growth rates in aviation demand over time. The most obvious example is the impact of jet aircraft on the aviation industry, which resulted in a growth rate that far exceeded expectations. Such changes are difficult, if not impossible to predict, and there is simply no mathematical way to estimate their impacts. Using a broad spectrum of local, regional, and national economic and aviation information, and analyzing the most current aviation trends, forecasts have been developed and presented in the following sections.

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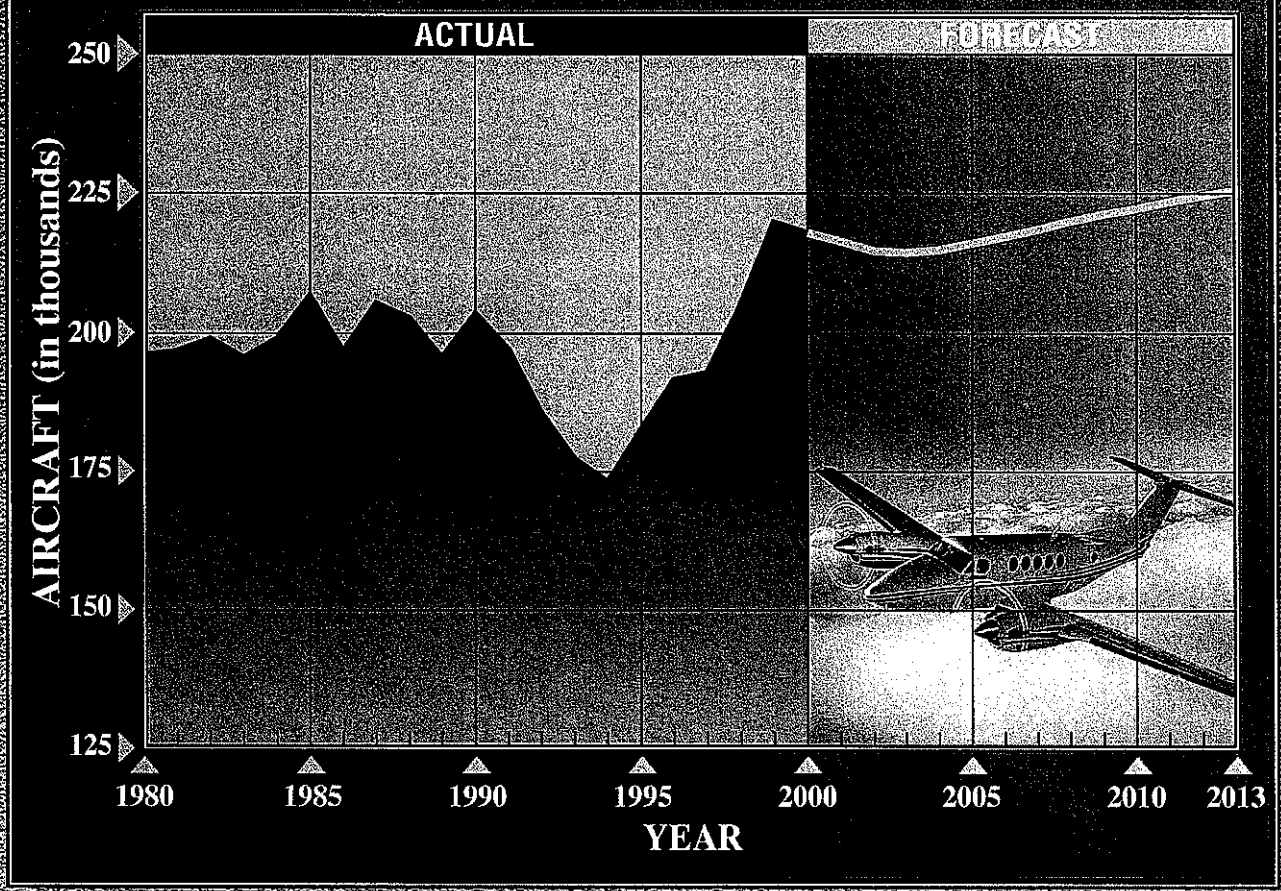
ACTIVE GENERAL AVIATION AIRCRAFT



U.S. ACTIVE GENERAL AVIATION AIRCRAFT (in thousands)

	FIXED WING								
	PISTON		TURBINE		ROTORCRAFT				
As of Dec. 31, 1998	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine	Experimental	Other	Total
2000	149.4	21.1	5.8	7.0	2.7	4.5	20.4	6.7	217.6
2003	146.0	20.7	5.7	7.5	2.6	4.3	20.4	6.7	213.9
2008	148.7	20.7	5.8	9.6	2.8	4.5	20.8	6.8	219.7
2013	152.0	20.7	5.9	10.9	2.9	4.6	21.4	6.9	225.3

Sources: FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.
FAA Aerospace Forecasts, Fiscal Years 2002-2013.

Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

PORT OF ST. HELENS

Exhibit 2A
U.S. ACTIVE GENERAL AVIATION
AIRCRAFT FORECASTS

SOCIOECONOMIC PROJECTIONS

A variety of historical and forecast socioeconomic data related to Columbia County and the State of Oregon has been collected for use in various elements of this master plan. This information provides essential background for use in determining aviation service level requirements. Aviation forecasts are often related to the population base, as well as the economic strength of the region (i.e. personal income per capita and employment sectors).

POPULATION

Population is one of the most important elements to consider when planning for future needs of the airport. Historical population totals for the City of Scappoose, Columbia County, and the State of Oregon were obtained from the U.S. Census Bureau and are presented in **Table 2A**. Oregon's population experienced a 1.9 percent average annual growth rate between 1990 and 2000, with nearly one million new residents. During this same time, Columbia County's population increased at an average annual rate of 1.5 percent. The City's population increased by more than 1,400 persons over the past decade, growing at an average annual rate of 3.5 percent.

TABLE 2A
Historical and Forecast Population
Columbia County and Oregon

	HISTORICAL			FORECAST			
AREA	**1990**	**2000**	**Avg. Annual Growth Rate (1990-2000)**	**2007**	**2012**	**2022**	**Avg. Annual Growth Rate (2000-2022)**
Columbia County	37,557	43,560	1.5%	44,560	46,640	51,200	0.7%
State of Oregon	2,842,321	3,421,399	1.9%	3,719,800	3,948,900	4,416,600	1.2%

Source: Historical Population- U.S. Census Bureau; Forecast Population - Interpolated from State of Oregon Office of Economic Analysis.

Oregon's population is projected to grow at an average annual rate of 1.2 percent, which is nearly double the County's projected growth rate of 0.7 percent. According to the *2000 Oregon Department of Aviation Plan*, approximately 72 percent of the State's projected growth will be in the Portland metro area and Willamette Valley. Forecasts by the State of Oregon Office of Economic Analysis project the population in Columbia County to reach 51,200 by the end of the planning period. Population forecasts for the

City of Scappoose were not available. Assuming the City's population continues to grow at an average annual rate of 3.5 percent, the population would reach 10,600 by 2022.

EMPLOYMENT

Analysis of a community's employment base can be valuable in determining the overall well-being of that community. In most cases, the community's make-up and health is significantly impacted by the number of jobs, variety of employment opportunities, and types of wages provided by local employers. **Table 2B** presents historical and forecasted employment (non-agricultural) in Columbia County by economic sector.

TABLE 2B
Employment by Economic Sector
Columbia County

Economic Sector	2000	% of Total Employment 2000	2022	% of Total Employment 2022	Average Annual Growth Rate (2000-2022)
Total Employment	**14,330**	**100.0%**	**17,575**	**100.0%**	**0.9%**
Mining	130	0.9%	195	1.1%	1.9%
Construction	920	6.4%	1,080	6.1%	0.7%
Manufacturing	2,280	15.9%	2,485	14.1%	0.4%
Transp. & Public Utilities	1,110	7.7%	1,190	6.8%	0.3%
Wholesale Trade	320	2.2%	385	2.2%	0.8%
Retail Trade	2,920	20.4%	3,910	22.2%	1.3%
Finance, Ins., & Real Estate	1,090	7.6%	1,520	8.6%	1.5%
Services	3,430	23.9%	4,465	25.4%	1.2%
Government	2,130	14.9%	2,345	13.3%	0.4%

Source: CEDDS, Woods & Poole (2002).

As shown in the table, the services, retail trade, and manufacturing industries dominated the county's total employment in 2000. The services industry accounted for the largest share (3,430), capturing nearly 24 percent of all employment. The retail trade industry contributed approximately 20 percent (2,920) of the total, while the manufacturing industry made up nearly 16 percent (2,280) of all jobs in 2000. Government also plays an important part of the economic sector, capturing nearly 15 percent of total employment in 2000.

The current industry projections for the county indicate that total employment will increase at an average annual rate of 0.9 percent (3,245 jobs) between 2000 and 2022. The services industry will continue to dominate employment, growing at an average annual rate of 1.2 percent and capturing more than 25 percent of total employment by the year 2022. The retail trade, services, and government sectors will also continue to be significant sectors of employment through 2022.

INCOME

Table 2C compares per capita personal income (PCPI), adjusted for 1996 dollars, for Columbia County, the State of Oregon, and the United States. Historically, the PCPI for Columbia County has remained below that of both Oregon and the United States. Forecasts project an annual growth rate of less than one percent for Columbia County, while Oregon and the United States are projected to grow at an average annual rate of 1.0 percent and 1.1 percent, respectively. These forecasts are presented in **Table 2C**.

TABLE 2C
Personal Income Per Capita (1996$)

	HISTORICAL			FORECAST			
Area	1990	2000	Annual Increase 1990-2000	2007	2012	2022	Annual Increase 2000-2022
Columbia Co.	$19,170	$24,080	2.3%	$25,710	$26,780[1]	$28,600[1]	0.8%
Oregon	$21,320	$25,560	1.8%	$27,600	$29,060[1]	$32,010[1]	1.0%
United States	$22,870	$27,000	1.7%	$29,230	$30,900[1]	$34,500[1]	1.1%

Source: CEDDS, Woods & Poole (2002).
[1]Interpolated by Coffman Associates.

STATE AVIATION SYSTEM PLAN

Oregon's system of airports provides a crucial component to the state's transportation network. At the state level, the Oregon Department of Aviation provides state-wide planning through the *2002 Oregon Department of Aviation Plan*. The purpose of the Plan is to identify the physical facility needs for the state's system of airports. According to the most recent state aviation plan (2000), there are 101 public-use airports in the State of Oregon, including nine commercial service airports that provide regularly scheduled passenger services.

The *2000 Oregon Department of Aviation Plan* has established five categories of airports based on their different functions. Scappoose Industrial Airpark is listed as a Category 2 airport, which is classified as a business or high activity general aviation airport. Criteria for Category 2 airports is 30,000 operations per year, with at least 500 turbine operations. Activity levels at these airports are typically higher than at other general aviation airports and some Category 1 (commercial service) airports. Category 2 airports typically have locally-based business jets or turboprops and/or substantial amounts of itinerant turbine aircraft activity. Category 2 airports are largely concentrated in the Portland metro area and Willamette Valley, with several overlapping service areas.

The condition of existing facilities and the most recent estimates of based

aircraft and operations were provided in the *2000 Oregon Department of Aviation Plan*. Forecasts included in this Plan, as well as the *1997 Continuous Aviation System Plan*, will be examined for their projections of based aircraft, based aircraft fleet mix, and annual operations.

LOCAL SERVICE AREA

The general aviation service area is affected by the number of nearby airfields which also have the ability to base and serve general aviation aircraft. There are 16 public-use airports within a 30 nautical mile (nm) radius of Scappoose Industrial Airpark. Only three of these airports have a runway 5,000 feet or greater, which is generally preferred by corporate aviation departments operating turbine aircraft. Portland International Airport, whose longest runway is 11,000 feet, is the only commercial service airport within 30 nm.

Other factors affect the decision to base at a given airport, including availability of hangars (and rates), services offered (including fuel), access to major highways, and instrument capabilities. Services provided at many of these airports include major airframe and powerplant repair, aircraft maintenance, aircraft rental/sales, flight training, aerial tours, fuel, pilot supplies, aircraft hangars, tie-downs, courtesy transportation, and catering.

BASED AIRCRAFT FORECASTS

The number of based aircraft at the airport is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft, the growth of other general aviation activities and demands can be projected. Currently, there are 140 aircraft based at Scappoose Industrial Airpark, the majority of which are single-engine aircraft.

According to the *1994 Airport Layout Plan Update*, there were 106 aircraft based at Scappoose Industrial Airpark in 1992. This number has since increased, with the airport reporting 140 based aircraft for 2002. Limited information was available for the years in between. Therefore, time-series and regression analyses were not performed, as they would not provide useful projections of based aircraft. Instead, other means of comparison were used to develop forecasts of based aircraft at Scappoose Industrial Airpark.

The first method used to project based aircraft examined registered aircraft in Columbia and Washington counties, which is the local service area for Scappoose Industrial Airpark. There are currently 833 aircraft registered in the two counties, as compared to 599 registered in 1992. This increase represents an average annual growth rate of 3.4 percent. Applying this growth rate to the forecast years yields 985 registered aircraft by 2007; 1,160 registered aircraft by 2012; and 1,625 registered aircraft by 2022.

The next step was to examine the airport's market share of registered aircraft in the two counties. In 1992, the airport captured 18 percent of aircraft registered in Columbia and Washington counties. Since then, the airport's market share has decreased slightly, capturing 17 percent in 2002. Forecasts of based aircraft were developed based on registered aircraft projections and the airport's market share. The first forecast assumes the airport's market share will remain constant at 17 percent, yielding 276 based aircraft by 2022. The second forecast uses a decreasing market share projection to reflect the historical trend and yields 244 based aircraft by the year 2022. The third forecast assumes an increasing share projection to reflect a return to earlier market share percentages and yields 309 based aircraft by 2022. These market share forecasts are presented in **Table 2D**.

TABLE 2D
Based Aircraft Market Share of Registered Aircraft (Columbia and Washington County)
Scappoose Industrial Airpark

Year	Scappoose Based Aircraft	Registered Aircraft (Columbia & Washington counties)	% of Registered Aircraft Based at Scappoose
1992	106	599	18%
2002	140	833	17%
Constant Share Projection			
2007	167	985	17%
2012	197	1,160	17%
2022	276	1,625	17%
Decreasing Share Projection			
2007	163	985	16.5%
2012	186	1,160	16.0%
2022	244	1,625	15.0%
Increasing Share Projection			
2007	172	985	17.5%
2012	209	1,160	18.0%
2022	309	1,625	19.0%

Source: Historical based aircraft - 1994 ALP Update/airport records; Historical registered aircraft - Census of U.S. Civil Aircraft (1992), Avantex Aircraft & Airmen CD (2002).
* Registered aircraft projections based on historical growth rate (3.4 %).

Projections of based aircraft were also made in comparison to the percent of U.S. active general aviation aircraft based at Scappoose Industrial Airpark. There are a reported 216,200 active general aviation aircraft in the United States for 2002. By examining the airport's historical market share, a

constant market share projection and an increasing share projection were developed. The constant market share projection assumes the airport's market share will remain at 0.065 percent through the planning period, yielding 152 based aircraft by the year 2022. The increasing share projection was developed to represent the historical trend since 1992 and yields 199 based aircraft by the year 2022. These market share forecasts are presented in **Table 2E**.

TABLE 2E
Based Aircraft Market Share of U.S. Active General Aviation Aircraft
Scappoose Industrial Airpark

Year	Scappoose Based Aircraft	U.S. Active General Aviation Aircraft	% of U.S. Active GA Aircraft Based at Scappoose
1992	106	185,700	0.057%
2002	140	216,200	0.065%
Constant Share Projection			
2007	142	218,300	0.065%
2012	146	224,300	0.065%
2022	152	234,000[1]	0.065%
Increasing Share Projection			
2007	153	218,300	0.070%
2012	168	224,300	0.075%
2022	199	234,000[1]	0.085%

Source: Historical based aircraft - 1994 ALP Update/airport records; Historical and forecast U.S. active general aviation aircraft from FAA *Aerospace Forecasts, Fiscal Years 2002-2013*.
[1] Extrapolated by Coffman Associates.

Another forecast examined the airport's historical based aircraft as a ratio of 1,000 residents in Columbia County. The 2002 estimated population of Columbia County is 44,870, which equals 3.1 based aircraft per 1,000 residents. Assuming a constant share projection of 3.1 based aircraft per 1,000 residents yields 159 based aircraft by 2022. An increasing share projection was also developed to reflect the historical trend (which has increased at an annual rate of 1.4 percent over the past decade) and yields 256 based aircraft at Scappoose Industrial Airpark by 2022. Both of these forecasts are presented in **Table 2F**.

TABLE 2F
Based Aircraft Per 1,000 Residents (Columbia County)
Scappoose Industrial Airpark

Year	Scappoose Based Aircraft	Columbia County Population	Aircraft Per 1,000 Residents
1992	106	38,690	2.7
2002	140	44,870	3.1
Constant Ratio Projection			
2007	138	44,560	3.1
2012	145	46,640	3.1
2022	159	51,200	3.1
Increasing Ratio Projection			
2007	156	44,560	3.5
2012	187	46,640	4.0
2022	256	51,200	5.0

Source: Historical based aircraft - 1994 ALP Update/airport records; Historical population - U.S. Census Bureau, Forecast Population - Interpolated from State of Oregon Office of Economic Analysis.

Several additional forecasts were also examined, including previous master plans, state aviation system plans, and the FAA's *Terminal Area Forecast* (TAF). The most recent forecast is included in the *2000 Oregon Department of Aviation Plan*. This state plan used 1994's total of 126 based aircraft as the base year for their projections through the year 2018. Extrapolation of this forecast yields 174 based aircraft at Scappoose Industrial Airpark by the year 2022. The *1997 Oregon Continuous Aviation System Plan* was also examined. The forecast included in this plan, which also used 1994 as the base year for its projections, yields 175 based aircraft by the year 2022.

The two previous master plans that were examined include the *1994 Airport Layout Plan (ALP) Update* and the *1991 Airport Master Plan*. The forecasts included in both of these master plans anticipated a shift of aircraft from the expected closure of Evergreen Airport, which remains open to this day. The *1994 Airport Layout Plan (ALP) Update*, which projected based aircraft through 2013, used a total of 106 based aircraft as a basis. Extrapolation of this forecast yields 214 based aircraft by the year 2022. The *1991 Airport Master Plan* used the existing level of 117 based aircraft from which to base its forecasts. Projections of based aircraft included in this master plan were provided through the year 2008. Extrapolation of this forecast yields 156 based aircraft at Scappoose Industrial Airpark by the year 2022.

As previously mentioned, the FAA TAF was also examined. The FAA TAF projects based aircraft for all commercial service airports in the United States. However, the TAF used 75 as the number of based aircraft in 2000, which is well below the actual number. Therefore, forecasts of based aircraft included in the TAF were not considered relevant.

One final method used to project based aircraft at Scappoose Industrial Airpark examined the historical growth rate between 1992 and 2002. During this time, based aircraft grew at an average annual rate of 2.8 percent. This growth rate was applied to the forecast period and yields 243 based aircraft by the year 2022.

For planning purposes, a mid-range forecast is generally chosen. The *2000 Oregon Department of Aviation Plan* and the *1997 Oregon Continuous Aviation System Plan* seem to reflect the current number of based aircraft the closest. Interpolation of these two forecasts yields 135 and 138 based aircraft, respectively, at Scappoose Industrial Airpark for 2002. This is slightly below the current level of 140 based aircraft for 2002. However, the historical growth rate of based aircraft yields a much higher level of based aircraft. Therefore, the preferred planning forecast is one that falls in between the two state plans and the historical growth rate and yields 155 based aircraft by the year 2007; 170 based aircraft by the year 2012; and 195 based aircraft by the year 2022. **Table 2G** and **Exhibit 2B** summarize the based aircraft forecasts developed for Scappoose Industrial Airpark.

As previously mentioned, forecasts included in the *1994 Airport Layout Plan (ALP) Update* and the *1991 Airport Master Plan* anticipated a shift of aircraft from the expected closure of Evergreen Airport, which remains open to this day. However, the potential for closure of this airport is still anticipated. It is likely that several of the based aircraft at Evergreen Airport would choose to relocate to Scappoose Industrial Airpark. This is reflected in the chosen forecast.

BASED AIRCRAFT FLEET MIX

While the number of general aviation aircraft basing at Scappoose Industrial Airpark is projected to increase, it is important to know the fleet mix of the aircraft expected to use the airport. This will ensure the proper facilities in the future.

According to airport records, the fleet mix at Scappoose Industrial Airpark consists of the following: 122 single-engine aircraft, five multi-engine aircraft, one jet, six gyrocopters, and six ultralights. The forecast mix of based aircraft was determined by comparing existing and forecast U.S. general aviation trends. The trend in general aviation is toward a greater percentage of larger, more sophisticated aircraft as part of the national fleet. An increase in gyrocopters and ultralights can also be expected at the airport, as well as the addition of a few helicopters by the end of the planning period. General aviation fleet mix projections for the airport are presented in **Table 2H**.

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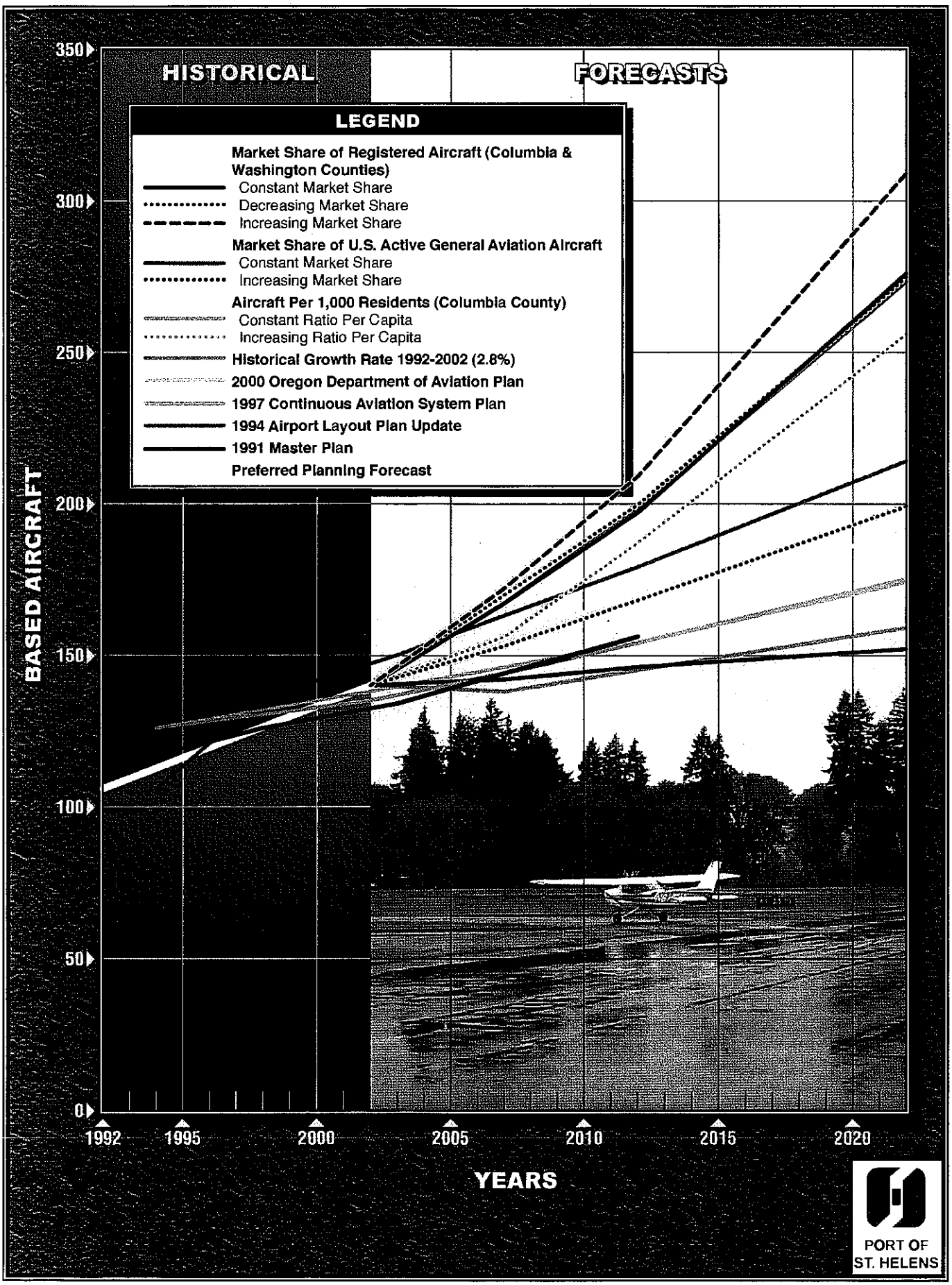


Exhibit 2B
BASED AIRCRAFT
FORECAST SUMMARY

TABLE 2G
Summary of Based Aircraft Forecasts
Scappoose Industrial Airpark

	2007	2012	2022
Market Share of Registered Aircraft (Columbia & Wash. Co.)			
Constant Market Share	167	197	276
Decreasing Market Share	163	186	244
Increasing Market Share	172	209	309
Market Share of U.S. Active GA Aircraft			
Constant Market Share	142	146	152
Increasing Market Share	153	168	199
Aircraft Per 1,000 Residents (Columbia County)			
Constant Ratio Projection	138	145	159
Increasing Ratio Projection	156	187	256
2000 Oregon Department of Aviation Plan	146 [1]	154 [1]	174
1997 Oregon Continuous Aviation System Plan	144 [1]	154 [1]	175 [2]
1994 Airport Layout Plan Update	163 [1]	179 [1]	214 [2]
1991 Airport Master Plan	144 [1]	156 [2]	-
Historical Growth Rate (1992-2002) 2.8%	161	185	243
Preferred Planning Forecast	**155**	**170**	**195**

[1] Interpolated by Coffman Associates
[2] Extrapolated by Coffman Associates.

TABLE 2H
General Aviation Fleet Mix Forecast
Scappoose Industrial Airpark

	EXISTING		FORECAST					
Type	**2002**	**%**	**2007**	**%**	**2012**	**%**	**2022**	**%**
Single-Engine	122	87.1%	131	84.2%	138	81.2%	147	76.0%
Multi-Engine	5	3.6%	7	4.5%	9	5.5%	15	7.5%
Jet	1	0.7%	2	1.5%	3	2.0%	6	3.0%
Gyrocopters	6	4.3%	7	4.8%	9	5.3%	12	6.0%
Helicopters	0	0.0%	1	0.5%	2	1.0%	4	2.0%
Ultralight	6	4.3%	7	4.5%	9	5.0%	11	5.5%
Total	**140**	**100.0%**	**155**	**100.0%**	**170**	**100.0%**	**195**	**100.0%**

* Multi-engine category includes turboprop aircraft.

OPERATIONS PROJECTIONS

General aviation operations are classified by the airport traffic control tower (ATCT) as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a high frequency.

Previous forecasts were first examined, including the *2000 Oregon Department of Aviation Plan*, the *1997 Oregon Continuous Aviation System Plan*, and the *1994 Airport Layout Plan Update*, and the FAA *Terminal Area Forecast*. Forecasts included in the 1994 and 1997 plans used 1994's total of 43,142 annual operations as a basis for their projections. Forecasts included in the *2000 Oregon Department of Aviation Plan* were extrapolated from the *1997 Oregon Continuous Aviation System Plan* and no changes in forecast assumptions were made. Forecasts included in the FAA TAF used 2000 as the base year for their projections, with an estimated 46,000 operations that year. Projections included in the TAF indicate no growth in operations through 2015. A summary of each of these projections is presented in **Table 2J**.

TABLE 2J
Summary of Annual Operations Forecasts
Scappoose Industrial Airpark

	2007	2012	2022
2000 Oregon Department of Aviation Plan	49,900[1]	52,770[1]	58,700[2]
1997 Oregon Continuous Aviation System Plan	56,350[1]	63,010[1]	-
1994 Airport Layout Plan Update	66,130[1]	73,020[1]	-
FAA *Terminal Area Forecast*	46,000	46,000	-

[1] Interpolated by Coffman Associates
[2] Extrapolated by Coffman Associates.

Projections of annual operations, based upon the number of operations per based aircraft, were also examined. The Oregon Department of Aviation performed acoustical counts between October 1, 2000 and September 30, 2002. Nine sample weeks of recordings were scheduled on Runway 15-33. Accurate data for estimating annual aircraft activity was obtained using six of the nine weeks. The estimate of 75,075 was used as a base number of

annual operations for 2002, from which two forecasts were then prepared.

The first forecast assumes the ratio of operations per based aircraft will remain constant at 535, yielding 104,300 annual operations by 2022. Since the FAA has projected growth in annual hours flown by general aviation aircraft and air taxi aircraft in their annual forecasts, the second forecast assumes that the ratio of operations per based aircraft should be expected to increase over time. The increasing ratio projection, which is the preferred planning forecast, is consistent with the trend over the past decade and yields 112,150 annual operations by 2022. The constant and increasing ratio projections are presented in **Table 2K**. It is expected that local operations will continue to account for 46 percent of total operations and itinerant operations 54 percent, as they have historically. Furthermore, air taxi and military operations are expected to account for three percent and two percent of itinerant operations, respectively, through the planning period.

TABLE 2K
Operations Per Based Aircraft Forecasts
Scappoose Industrial Airpark

Year	Based Aircraft	Itinerant Operations	Local Operations	Total Operations	Operations Per Based Aircraft
1992	106	15,810	18,560	34,370	324
2002	140	34,535	40,540	75,075	535
Constant Ratio Projection					
2007	155	38,135	44,765	82,900	535
2012	170	41,840	49,110	90,950	535
2022	195	47,990	56,310	104,300	535
Increasing Ratio Projection (Preferred Planning Forecast)					
2007	155	38,870	45,630	84,500	545
2012	170	43,400	50,950	94,350	555
2022	195	51,590	60,560	112,150	575

* 2002 annual operations are estimated from acoustical counts.

PEAKING CHARACTERISTICS

Most facility planning relates to levels of peak activity. The following planning definitions apply to the peak periods:

- **Peak Month** - The calendar month when peak aircraft operations occur.
- **Design Day** - The average day in the peak month.

- **Busy Day** - The busy day of a typical week in the peak month.

- **Design Hour** - The peak hour within the design day.

The design day is normally derived by dividing the peak month operations by the number of days in the month. However, commercial activity is often heavier on weekdays, which may require an adjustment to reflect peak weekday activity.

It is important to realize that only the peak month is an absolute peak within the year. Each of the other periods will be exceeded at various times during the year. However, each provide reasonable planning standards that can be applied without overbuilding or being too restrictive.

The peak month for general aviation operations was estimated at 10.0 percent of annual operations, which equates to 7,508 operations. Forecasts of peak month activity have been developed by applying this percentage to the forecasts of annual operations. Design day operations were calculated by dividing the total number of operations in the peak month by the number of days in the month. The design hour is projected as 12.0 percent of the design day operations. Busy day operations were calculated as 1.25 times the design day activity. **Table 2L** summarizes the general aviation peak activity forecasts.

TABLE 2L
Peak Period Forecasts
Scappoose Industrial Airpark

		FORECASTS		
	2002	**2007**	**2012**	**2022**
General Aviation Operations				
Annual	75,075	84,500	94,350	112,150
Peak Month (10.0%)	7,508	8,450	9,435	11,215
Design Day	250	282	315	374
Busy Day	313	352	393	467
Design Hour (12.0%)	30	34	38	45

SUMMARY

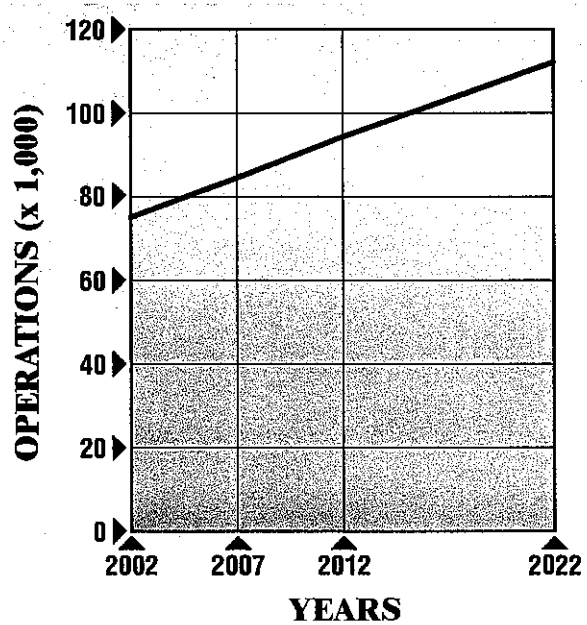
This chapter has provided forecasts for each sector of aviation demand anticipated over the planning period. **Exhibit 2C** presents a summary of the aviation forecasts developed for Scappoose Industrial Airpark. The airport is expected to experience an increase in total based aircraft, annual operations, as well as an increase in turbine-powered aircraft through the planning period. The next step in this study is to assess the capacity of the existing facilities to accommodate forecast demand and determine what types of facilities will be needed to meet these demands.

02MP13-2C-4/3/03

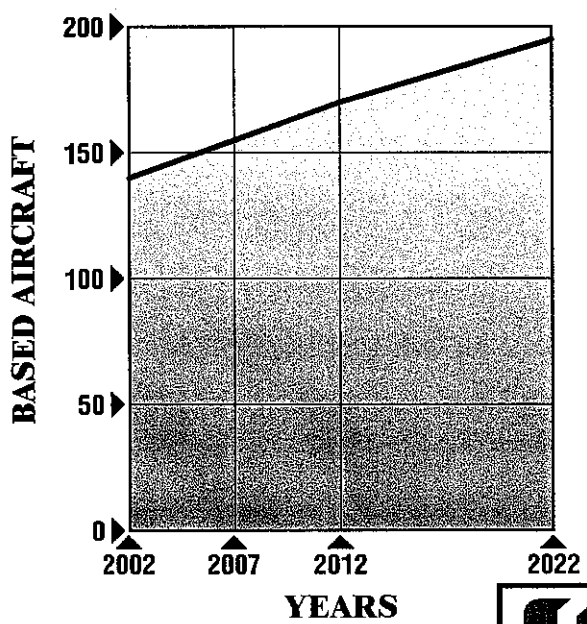
SUMMARY OF AVIATION ACTIVITY FORECASTS

CATEGORY	Historical 2002	Forecasts 2007	2012	2022
Annual Operations				
Itinerant				
Air Taxi	1,035	1,165	1,300	1,550
General Aviation	32,810	36,925	41,230	49,010
Military	690	780	870	1,030
Total Itinerant	**34,535**	**38,870**	**43,400**	**51,590**
Local				
General Aviation	40,540	45,630	50,950	60,560
Total Operations	**75,075**	**84,500**	**94,350**	**112,150**
Based Aircraft				
Single Engine	122	131	138	147
Multi-Engine	5	7	9	15
Jet	1	2	3	6
Gyrocopters	6	7	9	12
Helicopters	0	1	2	4
Ultralights	6	7	9	11
Total Based Aircraft	**140**	**155**	**170**	**195**

OPERATIONS FORECAST



BASED AIRCRAFT FORECAST



PORT OF ST. HELENS

Exhibit 2C
FORECAST SUMMARY

PORT OF
ST. HELENS

Chapter Three

FACILITY REQUIREMENTS/ALTERNATIVES

FACILITY REQUIREMENTS/ ALTERNATIVES

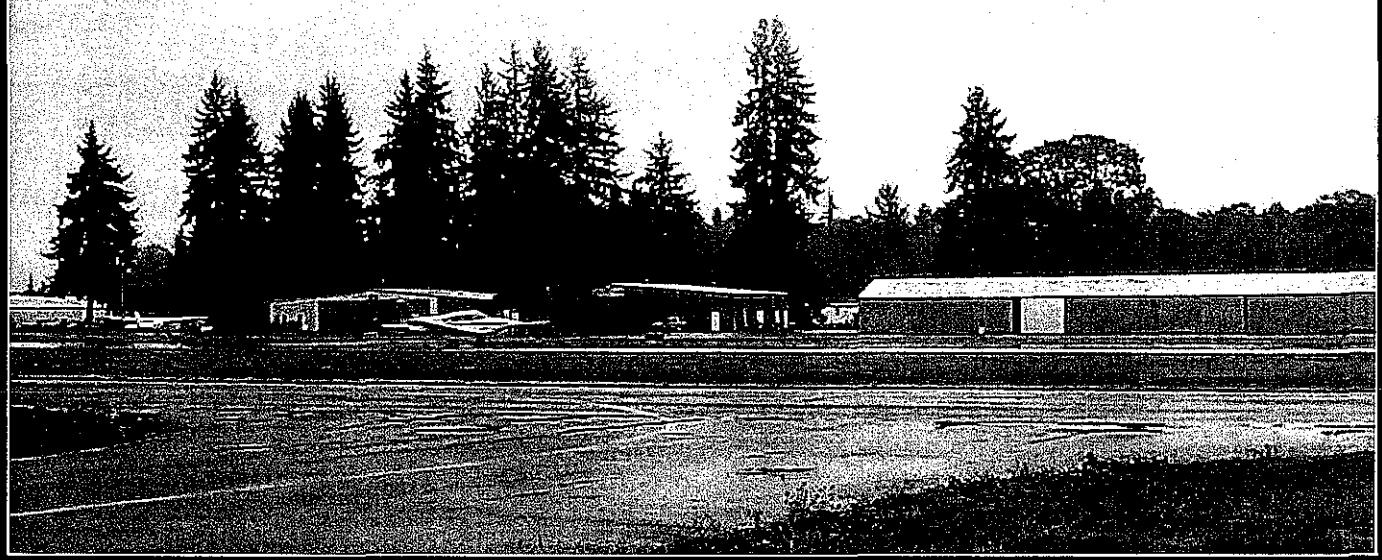
PORT OF ST. HELENS

To properly plan for the future of Scappoose Industrial Airpark, it is necessary to translate forecast aviation demand into the specific types and quantities of facilities that can adequately serve this identified demand. This chapter uses the results of the forecasts conducted in Chapter Two, as well as established planning criteria, to determine the airfield (i.e., runways, taxiways, navigational aids, marking and lighting), and landside (i.e., hangars, terminal building, aircraft parking apron) facility requirements.

The objective of this effort is to identify, in general terms, the adequacy of the existing airport facilities, outline what new facilities may be needed, and when these may be needed to accommodate forecast demands. Having established these facility requirements, a development alternative for providing these facilities have been evaluated at the conclusion of this chapter to determine the most cost-effective and efficient means for implementation.

The cost-effective, efficient, and orderly development of an airport should rely more upon actual demand at an airport than a time-based forecast figure. In order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established for Scappoose Industrial Airpark that take into consideration the reasonable range of aviation demand projections prepared in Chapter Two.

It is important to consider that the actual activity at the airport may be higher or lower than projected activity levels. By planning according to



activity milestones, the resultant plan can accommodate unexpected shifts, or changes in the area's aviation demand.

It is important that the plan accommodate these changes so that the Port of St. Helens can respond to unexpected changes in a timely fashion. These milestones provide flexibility, while potentially extending this plan's useful life if aviation trends slow over time.

The most important reason for utilizing milestones is that they allow the airport to develop facilities according to need generated by actual demand levels. The demand-based schedule provides flexibility in development, as development schedules can be slowed or expedited according to actual demand at any given time over the planning period. The resultant plan provides airport officials with a financially responsible and need-based program. **Table 3A** presents the planning horizon milestones for each activity demand category.

TABLE 3A
Planning Horizon Activity Levels
Scappoose Industrial Airpark

	Current Levels	Short-Term	Intermediate Term	Long-Term
Based Aircraft	140	155	170	195
Annual Operations	75,075	84,500	94,350	112,150

AIRFIELD REQUIREMENTS

Airfield requirements include the need for those facilities related to the arrival and departure of aircraft. These facilities are comprised of the following items:

- Runways (including safety areas)
- Taxiways
- Navigational Aids
- Airfield Lighting and Marking

The selection of appropriate Federal Aviation Administration (FAA) design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using, or are expected to use, the airport. Planning for future aircraft use is of particular importance since design standards are used to plan separation distances between facilities. These standards must be determined now since the relocation of these facilities will likely be extremely expensive at a later date.

The FAA has established a coding system to relate airport design criteria to the operational and physical characteristics of aircraft expected to use the airport. This code, the airport reference code (ARC), has two components: the first component,

depicted by a letter, is the aircraft approach speed (operational characteristic); the second component, depicted by a Roman numeral, is the airplane design group and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while aircraft wingspan primarily relates to separation criteria involving taxiways, taxilanes, and landside facilities.

According to FAA Advisory Circular (AC) 150/5300-13, *Airport Design*, an aircraft's approach category is based upon 1.3 times its stall speed in landing configuration at that aircraft's maximum certificated weight. The five approach categories used in airport planning are as follows:

Category A: Speed less than 91 knots.

Category B: Speed 91 knots or more, but less than 121 knots.

Category C: Speed 121 knots or more, but less than 141 knots.

Category D: Speed 141 knots or more, but less than 166 knots.

Category E: Speed greater than 166 knots.

The airplane design group (ADG) is based upon the aircraft's wingspan. The six ADG's used in airport planning are as follows:

Group I: Up to but not including 49 feet.

Group II: 49 feet up to but not including 79 feet.

Group III: 79 feet up to but not including 118 feet.

Group IV: 118 feet up to but not including 171 feet.

Group V: 171 feet up to but not including 214 feet.

Group VI: 214 feet or greater.

In order to determine facility requirements, an ARC should first be determined, then appropriate airport design criteria can be applied. This begins with a review of the type of aircraft using and expected to use Scappoose Industrial Airpark. **Exhibit 3A** summarizes representative aircraft by ARC.

The FAA recommends designing airport functional elements to meet the requirements of the most demanding ARC for that airport. Scappoose Industrial Airpark currently accommodates a wide variety of civilian aircraft use. Aircraft using the airport include small single and multi-engine aircraft, as well as small business jets. The majority of these aircraft fall within approach categories A and B and airplane design groups I and II.

As determined by the fleet mix forecast in Chapter Two, continued service by prop-jet aircraft is expected to continue throughout the planning period. The addition of the regional jet into the fleet

mix is also possible, considering the recent trend of regional/commuter airlines' transition towards advanced turboprop aircraft and small regional jets to fit their respective market needs. This potential mix of aircraft will continue to place the airport in the B-II category.

AIRFIELD DESIGN STANDARDS

The FAA has established several imaginary surfaces to protect aircraft operational areas and keep them free from obstructions that could affect the safe operation of aircraft. These include the obstacle free zone (OFZ), runway safety area (RSA), and runway protection zones (RPZ).

The RSA is "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 an excursion from the runway." An obstacle free zone is a volume of airspace that is required to be clear of objects, except for frangible items required for navigation of aircraft. It is centered along the runway and extended runway centerline. The RPZ is defined as an area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The dimensions of an RPZ are a function of the runway ARC and approach visibility minimums.

Table 3B summarizes the design requirements of these safety areas by airport reference code for Scappoose Industrial Airpark. The FAA expects these areas to be free from obstructions. As shown in the table, the airport currently meets the required dimensions for ARC B-II standards. A printout of the ARC B-II standards is presented in the appendix.

RUNWAYS

The adequacy of the existing runway system at Scappoose Industrial Airpark was analyzed from a number of perspectives, including airfield capacity, runway orientation, runway length, runway width, and pavement strength. From this information, requirements for runway improvements were determined for the airport.

Airfield Capacity

A demand/capacity analysis measures the capacity of the airfield configuration in order to identify and plan for additional development needs. Annual capacity of a single runway configuration normally exceeds 150,000 operations with a suitable parallel taxiway available. Since the forecasts for Scappoose Industrial Airpark remain below 150,000 operations, the capacity of the existing runway and taxiway system will not be reached, and the airfield will be able to meet operational demands.

Runway Orientation

Scappoose Industrial Airpark is equipped with a single runway (Runway

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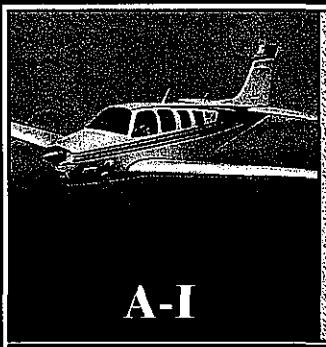
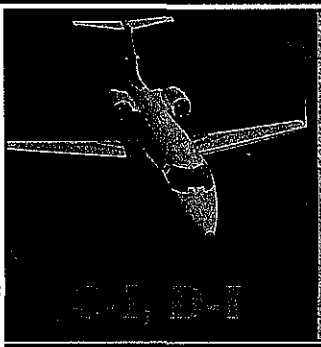


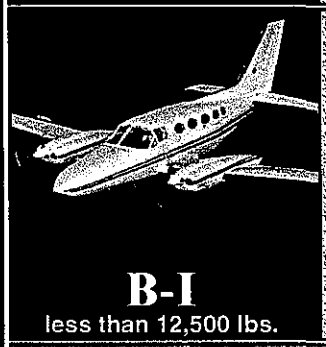
A-I

Beech Baron 55
Beech Bonanza
Cessna 150
Cessna 172
Piper Archer
Piper Seneca



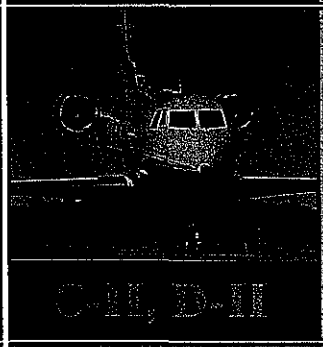
C-I, D-I

Lear 25, 35, 55
Israeli Westwind
HS 125



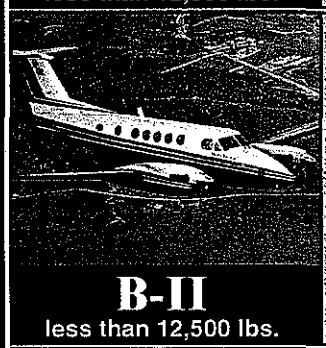
B-I
less than 12,500 lbs.

Beech Baron 58
Beech King Air 100
Cessna 402
Cessna 421
Piper Navajo
Piper Cheyenne
Swearingen Metroliner
Cessna Citation I



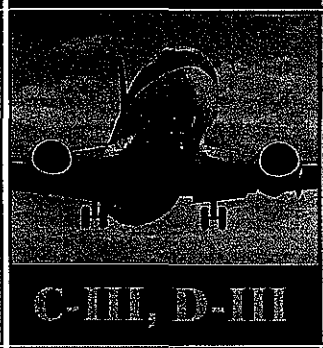
C-II, D-II

Gulfstream II, III, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar
Super King Air 350



B-II
less than 12,500 lbs.

Super King Air 200
Cessna 441
DHC Twin Otter

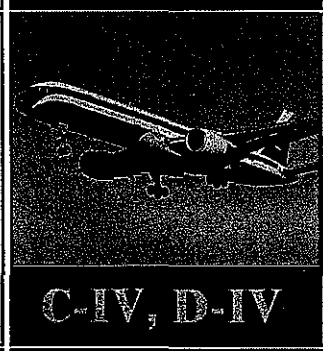


C-III, D-III

Boeing Business Jet
B 727-200
B 737-300 Series
MD-80, DC-9
Fokker 70, 100
A319, A320
Gulfstream V
Global Express

B-I, II
over 12,500 lbs.

Super King Air 300
Beech 1900
Jetstream 31
Falcon 10, 20, 50
Falcon 200, 900
Citation II, III, IV, V
Saab 340
Embraer 120

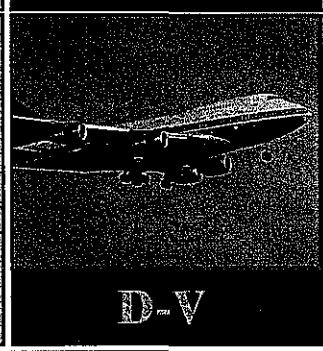


C-IV, D-IV

B-757
B-767
DC-8-70
DC-10
MD-11
L1011

A-III, B-III

DHC Dash 7
DHC Dash 8
DC-3
Convair 580
Fairchild F-27
ATR 72
ATP



D-V

B-747 Series
B-777

Note: Aircraft pictured is identified in bold type.

PORT OF ST. HELENS

Exhibit 3A
AIRPORT REFERENCE CODES

15-33), which is oriented in a north-south direction. For the operational safety and efficiency of an airport, it is desirable for the principal runway of an airport's runway system to be oriented as close as possible to the direction of the prevailing wind. This reduces the impact of crosswind components during landing or takeoff.

TABLE 3B
Airfield Safety Area Dimensional Standards (feet)

	DIMENSIONS AT SCAPPOOSE	ARC B-II STANDARDS
Runway Safety Area (RSA)		
Width	150	150
Length Beyond Runway End	300	300
Runway Object Free Area (OFA)		
Width	500	500
Length Beyond Runway End	300	300
Runway Obstacle Free Zone (OFZ)		
Width	500	400
Length Beyond Runway End	200	200
Runway Protection Zone (RPZ)		
Inner Width	500	500
Outer Width	700	700
Length	1,000	1,000

Source: FAA Airport Design Computer Program Version 4.2D.

FAA design standards recommend additional runway configurations when the primary runway configuration provides less than 95 percent wind coverage at specific crosswind components. The 95 percent wind coverage is computed on the basis of crosswinds not exceeding 10.5 knots for small aircraft weighing less than 12,500 pounds and from 13 to 20 knots for aircraft weighing over 12,500 pounds.

No wind data was available for Scappoose Industrial Airpark. However, the Airport Layout Plan notes that winds at the airport generally follow the runway alignment, with northerly and southerly winds occurring with approximately equal frequency.

Runway Length

The runway length requirements for an airport are based on five primary factors: airport elevation; mean maximum temperature of the hottest month; runway gradient (difference in runway elevation of each runway end); critical aircraft type expected to use the

airport; and stage length of the longest nonstop trip destination. Aircraft performance declines as each of these factors increase. Summertime temperatures and stage lengths are the primary factors in determining runway length requirements.

The local airport elevation is 58 feet above mean sea level (MSL) and the mean maximum temperature of the hottest month is 82 degrees Fahrenheit (F). Runway end elevations vary by approximately 28 feet along Runway 15-33.

The FAA's design software (Version 4.2D) was used to verify runway length requirements, which are summarized in **Table 3C**. As shown in the table, the FAA recommends a minimum runway length of 4,130 feet for small aircraft (less than 12,500 pounds) and 4,880 feet for larger aircraft using the facility. The current runway length of 5,100 feet accommodates most small business jets operating at Scappoose Industrial Airpark. The alternative evaluation will not consider additional runway length for the existing or forecast fleet mix.

TABLE 3C
Runway Lengths, FAA Design Software

Airport elevation	58 feet
Mean daily maximum temperature of the hottest month	82 F
Maximum difference in runway centerline elevation	28 feet
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2,440 feet
95 percent of these small airplanes	3,000 feet
100 percent of these small airplanes	3,550 feet
Small airplanes with more than 10 passenger seats	4,130 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	4,880 feet

Source: FAA Airport Design Computer Program Version 4.2D.

Runway Width

The width of the existing runway was also examined to determine the need for facility improvements. The current width of Runway 15-33 is100 feet. This exceeds the 75-foot standard for a B-II nonprecision instrument runway, which is the current and future ARC for Scappoose Industrial Airpark.

Runway Pavement Strength

The most important feature of airfield pavement is its ability to withstand

repeated use by aircraft of significant weight. The current strength rating on Runway 15-33 is 30,000 pounds single wheel loading (SWL) or 50,000 pounds dual wheel loading (DWL). The current strength ratings on Runway 15-33 are sufficient for the existing and future fleet. Over 45 percent of all business jets in the current fleet fall within the B-II category and can be accommodated on the current pavement.

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between the aprons and the runways, whereas other taxiways become necessary as activity increases at an airport to provide safe and efficient use of the airfield.

Taxiway width is determined by the ADG of the most demanding aircraft to use the taxiway. As previously mentioned, the most demanding aircraft to use the airfield fall within ADG II. According to FAA design standards, the minimum taxiway width for ADG II is 35 feet. Based upon a review of the current airport layout drawing, all taxiways at Scappoose Industrial Airpark are 35 feet or greater, which will be sufficient through the planning period.

The runway-taxiway separation distance was also examined. This distance is such to satisfy the requirement that no part of an aircraft (tail tip, wing tip) on the taxiway/taxilane centerline is within the runway safety area or penetrates the obstacle free zone (OFZ). According to the Airport Layout Plan, there are no OFZ object penetrations on the airport at this time. The current distances between the runway centerline and the east and west taxiway centerlines are 240 feet and 225 feet, respectively. The required distance for ARC B-II is 240 feet.

NAVIGATIONAL AND APPROACH AIDS

Electronic and visual guidance to arriving aircraft enhance the safety and capacity of the airfield. Such facilities are vital to the success of the airport, and provide additional safety to passengers using the air transportation system.

Instrument approaches are categorized as either precision or nonprecision. Precision instrument approach aids provide an exact alignment and descent path for an aircraft on final approach to a runway, while nonprecision instrument approach aids provide only runway alignment information. Most existing precision instrument approaches in the United States are instrument landing systems (ILS).

Presently, Scappoose Industrial Airpark is served with two instrument approaches: LOC/DME Runway 15 (either straight-in or circling) and VOR/DME or GPS-A (circling only). A localizer (LOC) transmits two radio beams on either side of, and overlapping, the extended runway

centerline for horizontal guidance. A VOR provides azimuth readings to pilots of properly equipped aircraft by transmitting a signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility to provide distance as well as direction information to the pilot.

The LOC/DME approach to Runway 15 provides the airport with the lowest minimums, allowing aircraft to land in instrument flight rules (IFR) weather with ceilings as low as 500 feet and visibility reduced to one mile for aircraft with approach speeds of less than 91 knots. For aircraft with approach speeds greater than 120 knots the visibility restriction increases to one and one-fourth miles.

The advent of technology has been one of the most important contributing factors in the growth of the aviation industry. Much of civil aviation and aerospace technology has been derived and enhanced from the initial development of technological improvements for military purposes. The use of orbiting satellites to confirm an aircraft's location is the latest military development to be made available to the civil aviation community.

The FAA has already approved the publication of thousands of "overlay" GPS instrument approach procedures. Stand-alone GPS approaches using the Wide-Area Augmentation System (WAAS) will gradually be phased in to provide precision instrument approaches. Current FAA guidance has been included in the appendix.

AIRFIELD MARKING, LIGHTING, AND SIGNAGE

Airports commonly include a variety of lighting and pavement markings to assist pilots utilizing the airport. These lighting systems and marking aids are used to assist pilots in locating the airport during the day, at night, during poor weather conditions, and assisting in the ground movement of aircraft.

Pavement Markings

Runway markings are designed according to the type of instrument approach available on the runway. FAA Advisory Circular 150/5340-1H, *Marking of Paved Areas on Airports*, provides the guidance necessary to design airport markings. Runway 15-33 has the necessary markings for the GPS approach serving the runway. The markings on this runway will suffice throughout the planning period.

Taxiway and apron areas also require marking. Yellow centerline stripes are currently painted on all taxiway surfaces at the airport to provide this guidance to pilots. The paved aircraft parking aprons also have centerline markings to indicate the alignment of taxilanes within these areas. Besides routine maintenance of the taxiway striping, these markings will be sufficient through the planning period.

Airfield Lighting

Airport lighting systems provide critical guidance to pilots during nighttime and low visibility operations. Runway 15-33 is equipped with medium intensity runway lighting (MIRL), which will be adequate throughout the planning period.

Effective ground movement of aircraft at night is enhanced by the availability of taxiway lighting. Currently, blue reflectors are installed on all taxiways and taxilanes. Taxiways should be planned for medium intensity edge lighting.

Visual Approach Lighting

In most instances, the landing phase of any flight must be conducted in visual conditions. To provide pilots with visual guidance information during landings to the runway, electronic visual approach aids are commonly provided at airports. Currently, Runway 15-33 is equipped with a four-light precision approach path indicator (PAPI-4) system on the left hand side of both ends of the runway. This will be sufficient through the planning period.

Runway end identifier lights (REILs) are flashing lights that facilitate identification of the runway end. Runway 15 is the only runway presently equipped with REILs. Consideration should be given to the addition of REILs on Runway 33.

Airfield Signage

Airfield signage provides another means of notifying pilots as to their location on the airport. A system of signs placed at several airfield intersections on the airport is the best method available to provide this guidance. Signs located at intersections of taxiways provide crucial information to avoid conflicts between moving aircraft. Directional signage instructs pilots as to the location of taxiways and terminal aprons. At Scappoose Industrial Airpark, lighted signs are installed at all taxiway and runway intersections.

LANDSIDE REQUIREMENTS

Landside facilities are those necessary for handling aircraft, passengers, and freight while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs.

The purpose of this section is to determine the landside space requirements for general aviation hangar and apron parking facilities during the planning period. In addition, the total surface area needed to accommodate general aviation activities throughout the planning period is estimated.

HANGARS

Utilization of hangar space varies as a function of local climate, security, and owner preferences. The trend in general aviation aircraft, whether single or multi-engine, is towards more sophisticated (and, consequently, more expensive) aircraft. Therefore, many aircraft owners prefer enclosed hangar space to outside tie-downs.

The demand for aircraft storage hangars is dependent upon the number and type of aircraft expected to be based at the airport in the future. For planning purposes, it is necessary to estimate hangar requirements based upon forecast operational activity. However, hangar development should be based upon actual demand trends and financial investment conditions. While a majority of aircraft owners prefer enclosed aircraft storage, a number of based aircraft will still tie-down outside (due to the lack of hangar availability, hangar rental rates, and/or operational needs). Therefore, enclosed hangar facilities should not be planned for each based aircraft. At Scappoose Industrial Airpark, approximately 93 percent of the based aircraft are currently stored in enclosed hangar facilities. In the future, it is estimated that the percentage of based aircraft stored in hangars will remain near this percent.

Approximately 90 percent of hangared aircraft at Scappoose Industrial Airpark are currently stored in T-hangars. The majority of aircraft stored in these hangars are single-engine. A planning standard of 1,200 square feet per based aircraft stored in T-hangars has been used to determine future T-hangar requirements.

Approximately five percent of hangared aircraft are stored in conventional hangars, while the remaining five percent are stored in executive hangars. Each of these types of hangars are designed for multiple aircraft storage. Executive hangars are generally less than 10,000 square feet, while conventional hangars are generally greater than 10,000 square feet.

As the trend towards more sophisticated aircraft continues throughout the planning period, it is important to determine the need for more conventional and executive hangars. For conventional and executive hangars, a planning standard of 1,200 square feet was used for single-engine aircraft, while a planning standard of 3,000 square feet was used for multi-engines, jets, and helicopters. These planning standards recognize that some of the larger business jets require a greater amount of space. Since portions of conventional hangars are also used for aircraft maintenance and servicing, requirements for maintenance/service hangar area were estimated using a planning standard of approximately 15 percent of the total hangar space needs. Future hangar requirements for the airport are summarized in **Table 3D**, which indicates additional T-hangar space is required in the short-term.

TABLE 3D
Aircraft Storage Requirements
Scappoose Industrial Airpark

			Future Requirements		
	Currently Available	**Current Need**	**Short-Term**	**Intermediate Term**	**Long-Term**
Aircraft to be Hangared		130	144	158	181
T-hangar Positions		120	128	138	152
Executive Hangar Positions		5	8	9	13
Conventional Hangar Positions		5	8	11	16
Hangar Area Requirements (s.f.)					
T-hangar Area	129,900	141,600	149,000	160,100	176,000
Executive Hangar Area	31,200	13,200	20,400	21,600	30,000
Conventional Hangar Area	40,800	12,000	20,400	27,600	40,800
Total Maintenance Area	30,300	26,000	28,500	31,400	37,000
Total Hangar Area (s.f.)	232,200	192,800	218,300	240,700	284,300

AIRCRAFT PARKING APRON

A parking apron should provide for the number of locally-based aircraft that are not stored in hangars, and for those aircraft used for air taxi and training activity. Parking should be provided for itinerant aircraft as well. As mentioned in the previous section, 93 percent of based aircraft at Scappoose Industrial Airpark are currently stored in hangars, and that percentage is expected to continue throughout the planning period.

For planning purposes, 15 percent of the based aircraft total will be used to determine the parking apron requirements of local aircraft, due to some aircraft requiring both hangar storage and parking apron. Since the majority of locally-based aircraft are stored in hangars, the area requirement for parking of locally-based aircraft is smaller than for transient aircraft. Therefore, a planning criterion of 650 square yards per aircraft was used to determine the apron requirements for local aircraft.

Along with based aircraft parking needs, transient aircraft parking needs must also be considered when determining apron requirements. A planning criterion of 800 square yards was used for single and multi-engine itinerant aircraft, and 1,600 square yards for itinerant jets. Current apron area at Scappoose Industrial Airpark includes two paved aprons totaling approximately 13,300 square yards and 40 tie-downs. These two aprons are for both based and transient aircraft. Additional aircraft parking is provided in a turf parking area, which is located west of the Runway 15 end and provides parking for approximately 20 aircraft. The turf parking area has been included as part of the current available apron space and tie-down positions.

Total aircraft parking apron requirements are presented in **Table 3E**. According to the table, while no additional tie-down positions will be required until the intermediate term, additional apron area is required in the short-term. This is due to planning standards requiring more square yards per aircraft than current standards.

TABLE 3E
Aircraft Parking Apron Requirements
Scappoose Industrial Airpark

	Currently Available	Short-Term	Intermediate Term	Long-Term
Single, Multi-Engine Transient Aircraft Positions		30	34	40
Apron Area (s.y.)		24,000	27,200	32,000
Transient Jet Aircraft Positions		5	6	7
Apron Area (s.y.)		8,000	9,600	11,200
Locally-Based Aircraft Positions		23	26	29
Apron Area (s.y.)		14,950	16,900	18,850
Total Positions	60	58	66	76
Total Apron Area (s.y.)	20,000	46,950	53,700	62,050

VEHICLE PARKING

The airport currently maintains one parking lot, which provides approximately 20,000 square feet of space. Limited parking is also provided next to Transwestern. Vehicular parking demands have been determined based on an evaluation of the existing airport use, as well as industry standards, which consider one-half of based aircraft at the airport will require a parking space. As shown in **Table 3F**, additional parking area will be required at Scappoose Industrial Airpark through the planning period.

SUPPORT REQUIREMENTS

Various facilities that do not logically fall within classifications of airfield, terminal building, or general aviation areas have also been identified. These other areas provide certain functions related to the overall operation of the airport, and include: aircraft rescue and firefighting, fuel storage, and airport maintenance facilities.

TABLE 3F
Vehicle Parking Requirements
Scappoose Industrial Airpark

		Future Requirements		
	Available	Short-Term	Intermediate Term	Long-Term
Design Hour Passengers		28	31	37
Terminal Vehicle Spaces		37	41	48
Parking Area (s.f.)		14,600	16,400	19,400
General Aviation Spaces		78	85	98
Parking Area (s.f.)		31,000	34,000	39,000
Total Parking Spaces	N/A	114	126	146
Total Parking Area (s.f.)	20,000	45,600	50,400	58,400

AIRCRAFT RESCUE AND FIREFIGHTING

There are no aircraft rescue and firefighting (ARFF) facilities located at Scappoose Industrial Airpark. ARFF services are the responsibility of the Scappoose Rural Fire Protection District, a combination of career and volunteer firefighters. This station is located on Highway 30, approximately two miles from the airport.

AIRPORT MAINTENANCE/ STORAGE FACILITIES

Current storage facilities at Scappoose Industrial Airpark include a small storage shed located next to the airport beacon. Additional storage is provided by the executive and conventional hangars. Adequate area needs to be reserved for expansion of these facilities.

FUEL STORAGE

Scappoose Industrial Airpark has two fuel farms; both located next to Transwestern. Storage facilities include two underground fuel tanks with a capacity of 10,310 gallons of 100 LL fuel and Jet A fuel each. Area should be reserved to allow for expansion of the fuel farm, should their demands change throughout the planning period. Planning standards usually recommend a two-week minimum supply.

AIRPORT DEVELOPMENT ALTERNATIVES

Once airside and landside facility needs have been identified for the planning period, the next step is to evaluate the various ways these facilities can be provided. While the possibilities of alternatives can be numerous, only

those which have the greatest potential for implementation are identified. The alternatives analysis is an important step in the planning process since it provides the underlying rationale for the final master plan recommendations. Following a review of the airport development alternatives with the Planning Advisory Committee (PAC) and the Port of St. Helens, a final master plan concept will be recommended.

BACKGROUND

Prior to presenting airport development alternatives, it is helpful to review some of the previous airport planning efforts and the development that has occurred during the intervening years. Recounting recent or ongoing improvements will assist with the identification of current issues affecting future development options. Recommendations included in the *1994 Airport Layout Plan Update* included:

- Purchasing land on both sides of the runway to a depth of approximately 900 feet on either side of the runway centerline in order to provide additional land for the necessary facilities. (Underway on the east side.)

- Upgrade of airport height restriction zones within the City of Scappoose and Columbia County.

- Acquisition of avigation easements within the areas of the FAR Part 77 approach surface (up the elevation of the horizontal surface).

- Establishment of an Airport Impact Overlay Zone one mile around the airport, which would require a seller to disclose to a potential buyer that the property is within one mile of the airport.

AIRFIELD ALTERNATIVES

Because airfield facilities physically dominate a great deal of the airport's property, airfield facility needs are often the most critical factor in the determination of viable airport development alternatives. The runway system, in particular, requires the greatest commitment of land area and often imparts the greatest influence on the identification and development of other airport facilities. In addition, FAA design criteria must be considered when looking at airfield improvements. These criteria, depending upon the areas around the airport, can often have a significant impact on the availability of various alternatives which are designed to meet airfield needs.

Runway

The facility needs evaluation, which was completed earlier in this chapter, indicates that the runway's current length of 5,100 feet is sufficient throughout the planning period and will not consider additional runway length for the existing or forecast fleet mix. As previously mentioned, wind coverage at the airport on the runway meets the FAA's recommended 95 percent coverage and does not justify a crosswind runway.

Taxiways

Taxiways are primarily constructed to facilitate aircraft movements to and from the runway system. The availability of entrance and exit taxiways can affect the overall efficiency of the airfield. Taxiway improvements should include consideration of additional entrance and exit taxiways to provide access to future landside facilities on both sides of the runway. These potential taxiways are identified on **Exhibit 3B**.

LANDSIDE ALTERNATIVES

Landside facilities are those necessary for handling aircraft, passengers, and freight while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs.

Existing general aviation facilities at Scappoose Industrial Airpark were examined earlier in this chapter. The existing twelve T-hangar buildings at the airport provide storage for a total of 115 aircraft. Currently, there are no vacant T-hangars available at the airport and the conventional hangars are also at maximum capacity, which indicates the need to examine the potential for short-term facility development. This development will likely need to take place in phases throughout the planning period.

Available land for immediate development is limited at this time. The Port plans to construct a 16-unit hangar facility on the west side of the airport in 2004. One area, which consists of approximately six units, remains on the west side and is available for development. In addition, the Port of St. Helens has executed a Memorandum of Purchase and Sale Agreement for ±400 acres on the east side of the runway. Approximately 60 acres of this property will be dedicated for airport development. The acquisition of this property will allow adequate space to construct new hangar facilities to meet the projected demand through the planning period.

To accommodate future demand in a smooth and orderly progression, a series of developments will need to take place in stages throughout the planning period. **Exhibit 3B** depicts the three stages of proposed landside development. The first stage involves the construction of two rows of additional T-hangars on the east side of the runway to meet the short-term demand levels.

However, some existing facilities will first need to be removed in order to develop the proposed layout. It should also be noted that a 4,500 square-foot shed hangar and a 13,200 square-foot T-hangar may also need to be removed/relocated. According to the *Airport Layout Plan* (October 2001), these two hangars lie within the BRL, which is 400 feet from the runway centerline. These two hangars are shown on **Exhibit 3B**. The BRL can be

defined as a line which identifies suitable building area locations on the airport. The BRL should encompass the runway protection zones, the runway object free area, the runway visibility zone (an area formed by imaginary lines connecting the two runways' visibility points), NAVAID critical areas, areas required for terminal instrument procedures, and airport traffic control tower clear line-of-sight.

The initial hangars (10-units each) will be developed on the north end of the east side (where the existing facilities are to be removed) and be configured parallel to the runway. The dimensions of these hangars will remain consistent with the existing hangars (10,000 square feet each).

The second stage of development will involve the construction of additional executive hangars on the east side of the runway (approximately 8,000 square feet each), as well as an additional conventional hangar on the west side of the runway (approximately 17,600 square feet). These proposed hangars will provide additional aircraft storage as well as additional maintenance area to meet the projected demand levels. The executive and conventional hangars could also be leased to corporate operators. This stage of development will also involve the construction of an additional row of 10-unit T-hangars along the east side of the runway (south of the proposed executive hangars). Remaining consistent with existing T-hangar dimensions, these proposed hangars will also be built to a standard of 10,000 square feet each and parallel to the runway.

The final stage of development, which will take place during the last ten years of the planning period, proposes an additional row of 10-unit hangars along the east side of the runway (south of the proposed conventional hangars and apron area). Remaining consistent with existing T-hangar dimensions, these proposed hangars will also be built to a standard of 10,000 square feet each and parallel to the runway. This stage of development also proposes additional conventional hangars and a possible fixed base operator (FBO) (approximately 15,000 square feet each) on the east side of the runway. An apron area with tie-downs would also be added to accommodate the proposed hangars.

While the proposed hangar developments for Scappoose Industrial Airpark exceed the projected demand in the long term, additional factors were considered. For instance, the selected forecast, which was a mid-range forecast, assumes 195 based aircraft by the end of the planning period. However, the high end of projected based aircraft was also examined and yields as many as 309 based aircraft by the end of the planning period, which would warrant additional aircraft storage.

Along with the development of the proposed facilities will be the need for roadway access to these facilities. Currently, there is no perimeter roadway utility/infrastructure access to

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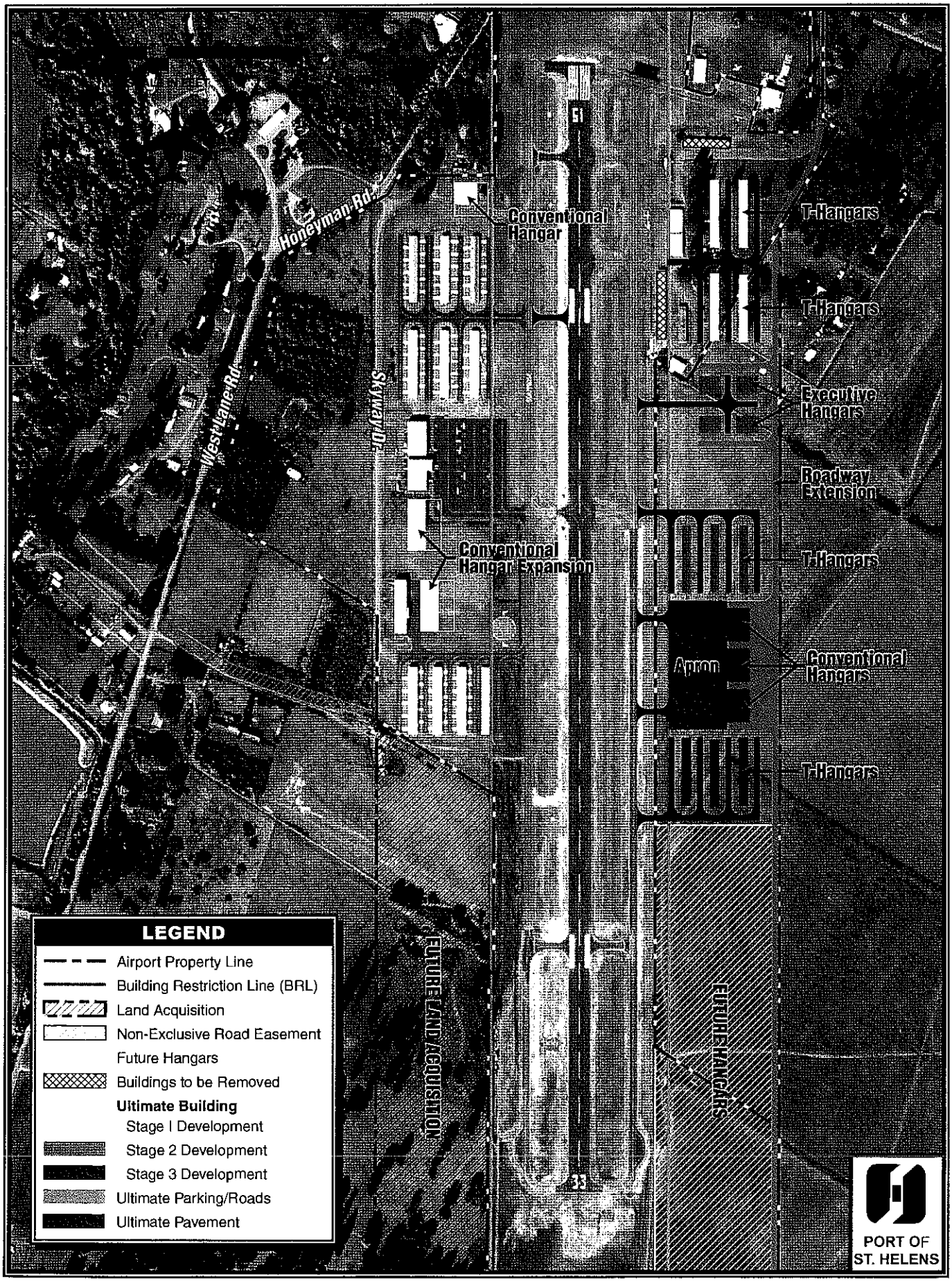

Exhibit 3B
LANDSIDE DEVELOPMENT ALTERNATIVE

the southern two-thirds of the airport on the east side or to the southern half of the airport on the west side. **Exhibit 3B** depicts the roadways and taxiways necessary to access the proposed facilities.

INDUSTRIAL BUSINESS PARK

Immediately adjacent to Scappoose Industrial Airpark, the Port of St. Helens owns approximately 20 acres of land that has been identified as having potential for expanded business development. This property is zoned Light Industrial (LI) and is outside of FAA-regulated areas of the Airpark, which allows for a mixture of light manufacturing and industrial development as a conditional use. Access to this site is currently provided by Honeyman Road from the northwest and by West Lane Road from the southeast. West Lane Road can also be accessed from the southwest via Highway 30.

A Master Plan for Scappoose Airpark's Industrial Business Park was completed by CIDA in April 2001 and outlined a number of alternatives. The selected plan (Plan G), which was accepted by the Board of Commissioners and the Port of St. Helens, is outlined in the following paragraphs.

As shown on **Exhibit 3C**, Plan G proposes a number of buildings for industrial use while emphasizing a north-south automobile access through the Business Park to provide improved separation between automobiles and aircraft along the east boundary. This plan also recommends the complete removal of Skyway Drive in order to allow for direct access to the Business Park.

The proposed building in this plan may also be shifted in order to provide additional space, if needed, for multiple and/or larger aircraft access and maneuverability. For example, A and B may be sited further apart (by removing parking surrounding each building) in order to provide additional maneuvering space between them. Similarly, building D may also be sited further to the north. Also, each building may be decreased in width (from approximately 100 feet to 60 or 80 feet wide). However, while a narrower building may work well for airplane maintenance, industry standards dictate an 80 to 100-foot wide building as a potential long term phased industrial development investment.

Another option for providing adequate access/maneuvering space for aircraft will be to develop buildings A and C, while omitting building B. This would provide for a maximum amount of aircraft maneuvering/access space in the short term while preserving building B's lot for development in the future. Similarly, building E could be developed while building D is omitted.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet potential aviation demands projected for the airport through the planning

horizon and assess the airside and landside development alternatives. This process involved a detailed analysis of short and long term requirements as well as future growth potential. Current airport design standards were considered at each stage of development.

Upon review of this report by the Planning Advisory Committee (PAC), the public, and Port officials, a final master plan concept can be formed. The resultant plan will represent an airside facility that fulfills safety and design standards and a landside complex that can be developed as demand dictates.

The proposed development plan for the airport must represent a means by which the airport can grow in a balanced manner, both on the airside as well as the landside, to accommodate forecast demand. In addition, it must provide (as all good development plans should) for flexibility in the plan to meet activity growth beyond the long term planning period. The remaining chapters will be dedicated to refining the basic concept into a final plan with recommendations to ensure proper implementation and timing for a demand-based program.

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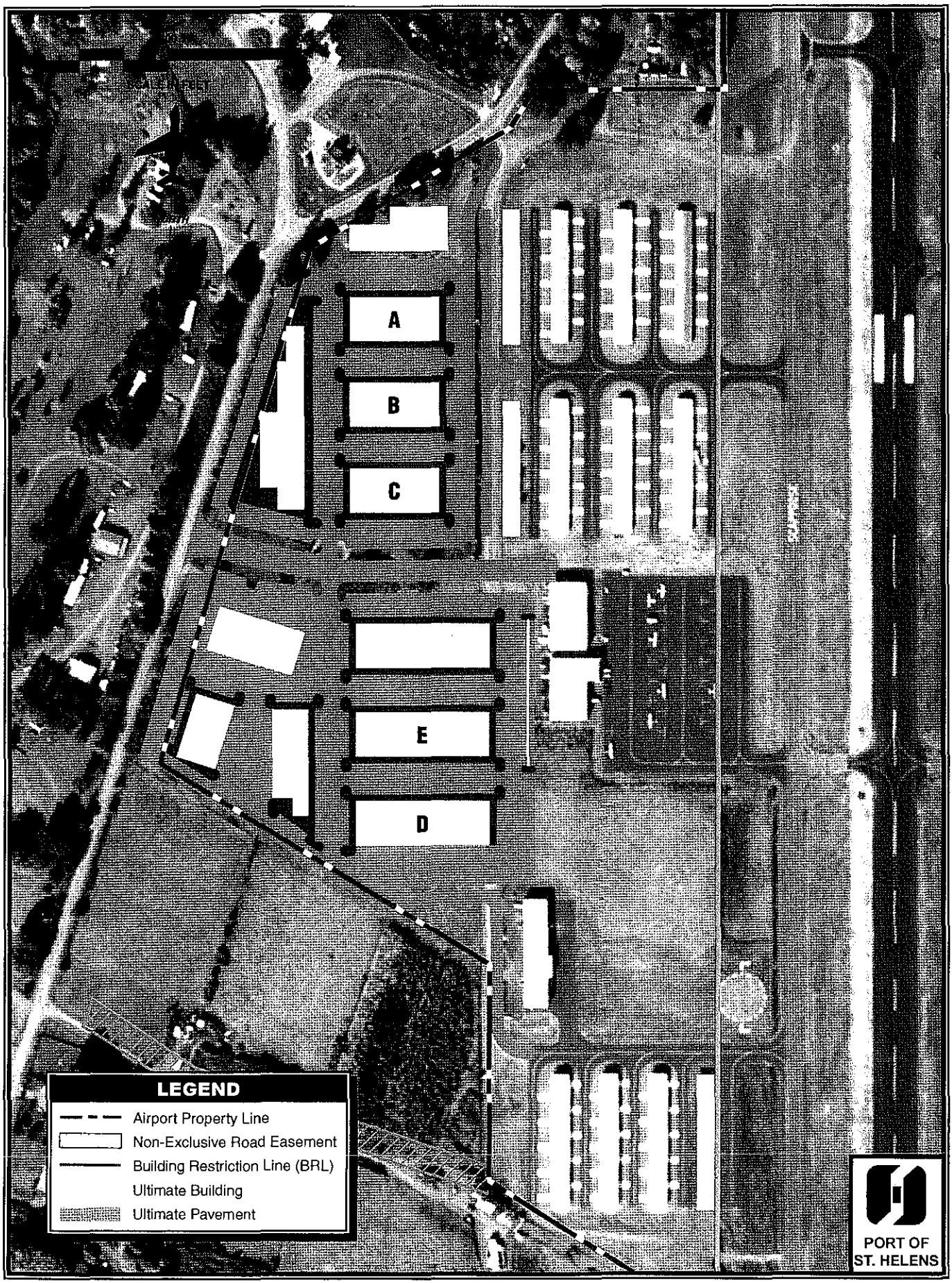


Exhibit 3C
SCAPPOOSE INDUSTRIAL
BUSINESS PARK (PLAN G)

PORT OF
ST. HELENS

Chapter Four

AIRPORT PLANS

PORT OF
ST. HELENS

AIRPORT PLANS

INTRODUCTION

The airport plans are one of the last steps in developing a master plan. They are a pictorial representation and summarization of the efforts made in the master planning process. The previous chapters on Inventory, Forecasting, and Facility Requirements/ Alternatives and the reviews provided by the Planning Advisory Committee (PAC) supply the basis for the existing and future airport layouts that are shown in the airport layout drawings. As was previously discussed, the development at an airport should rely more on actual demand rather than a time-based forecast. The development shown in the airport plans reflects planned development, but the course and timing of this development must be carried forward as airport activity demands rather than in the exact form it has been presented.

The basemapping developed for the previous master plan airport layout drawings was used for this updated set of drawings. An aerial photo of the airport is also used as a basemap when appropriate.

AIRPORT LAYOUT DRAWINGS

COVER SHEET

The cover sheet shows both the location and the vicinity map for the Scappoose Industrial Airpark. A sheet index to the master plan drawings is also provided on this sheet.

AIRPORT LAYOUT PLAN

The airport layout plan depicts the current airport layout and the proposed improvements to the airport for the 20-year planning period. The list of improvements and costs over the next 20-years are also shown in the Capital Improvements Projects (CIP) at the end of this chapter. As previously mentioned, the needs defined in the Facility Requirements/ Alternatives (Chapter 3) and the reviews provided by the PAC were the basis for determining the proposed improvements at the Scappoose Industrial Airpark. The future airport development is shown on the airport layout plan as required by the FAA. The plan can be modified to accommodate development as dictated by demand.

One of the primary focuses for future improvements at the airport is continued expansion of the hangar areas. Proposed property acquisition on both the west and east sides of the airport allow for a significant amount of growth at the airport. This growth will occur in stages over the next 20 years and beyond. The process of new hangar construction will begin in 2004, with the east side property acquisition. Several parcels on the east side could be acquired should they become available for purchase. This would allow the construction of additional hangars as outlined in Alternative 3B.

A new FBO hangar is planned for construction in 2004 which will have associated apron, vehicle parking and fencing improvements. Initial construction to prepare this FBO development area for use will occur just prior to the hangar construction. Also, in 2004, a new hangar will be constructed on the west side of the airfield, adjacent to Skyway Drive. In 2005, a new taxilane will be constructed on the west side of the airfield adjacent to the Oregon Aero hangar. In 2006, taxiway and taxilane construction is scheduled for the northeast corner of the airfield, along with the construction of a hangar on the west side on the airfield. Another hangar will be constructed on the east side in 2007. The hangar construction will continue throughout the 20-year planning period with conventional and executive hangars being developed on the east side of the airport with associated access road and taxilane construction. This development is presented in detail on the Airport Layout Plan and includes property acquisition and access road, utility, taxilane and apron construction.

In addition to the taxilane and hangar development, a number of other improvements are planned for the airport over the 20-year planning period. In 2004, fencing improvements and avigation easement acquisition are slated to occur, along with construction of a new hangar in the northwest corner of the airport property. Building demolition on the northeast side is scheduled for 2005, along with obstruction removal. Airfield pavement maintenance improvements are planned for the years 2005 and 2008. These improvements incorporate the slurry seals, fog seals, striping maintenance, overlays and pavement rehabilitation recommended by PCI into

the Oregon Department of Aviation pavement maintenance program. Oregon Aero plans to expand their hangar space during the early years of the planning period. This expansion is shown on the capital improvement program for 2005. Taxiway lighting on the east side parallel taxiway, is planned for 2006. Sherpa Aircraft is also planning construction of a new hangar and an additional hangar will be constructed on the west side of the airport, which is shown on the plan for the year 2006. In 2007, pavement marking maintenance is scheduled to occur on all taxilanes and taxiways on the west side of the airfield, along with some additional security fencing.

The Port is proposing development of a 20-acre parcel of land just west of Skyway Drive. The development of the Airport Industrial Business Park would include aviation-related business, light manufacturing and industrial development and would likely occur throughout all three stages of the of the 20-year improvement program. The land for the business park is on airport property and would have access to the airfield. The CIDA report analyzed seven layout alternatives, and the preferred alternative, Master Plan G, is shown on the ALP. The final development alternative is pending FAA approval. The build out of the business park is slated to occur over the next 20 years as demand dictates. Prior to, or in conjunction with the construction of the business park, access improvements will need to be made for the development. The County has stated that the development will require improvements of the intersection of Skyway Drive and Honeyman Road and widening of West Lane Road at least along the development frontage. The County is also concerned with the impact of traffic as West Lane Road enters into Scappoose to the south of the airport, but has not given any indication of required improvements at that location. The primary access to the development is planned off of West Lane Road, through the center of the business park. Access improvements to the site are shown on the ALP and in the CIP under the title of Industrial Business Park Roadway Package for construction in 2005 and 2006. This represents the cost for the primary access improvements and the widening of West Lane Road as presented in the CIDA report. These costs could be shared between the Port, the County and the developer and include the utility improvements in the roadway. Improvements to the intersection of Honeyman Road and Sky Drive are not included because the improvements and costs are unknown at this time. The Port and County need to further develop the required improvements at this intersection.

In addition to the roadway improvements, utility improvements are needed for the development. All utilities needed are available with the exception of gas and sanitary sewer. The sanitary sewer line will need to be extended from approximately 1 mile away (at the intersection of West Lane Road and Forest/Crown Z Road) up to the site. This improvement is shown for 2006. The business park will need a gas line to replace the propane tanks

currently used. Discussions will take place between the Port and Northwest Natural Gas on how to extend service to the site. Costs for this extension are unknown and therefore not listed in the CIP.

During the Stage II planning period, years 2009 through 2013, property acquisition is planned for the property on the west side of the airport. Existing farm buildings will be removed after this property acquisition is made to allow for development of the property. Also, the parallel taxiway on the west side of the airport will be shifted 15 feet to the west to meet the B-II separation standard. Some fencing and the segmented circle and windcone will need to be relocated to accommodate this improvement. As a simultaneous improvement to the parallel taxiway shift, new taxiway lighting will be installed. REILs for Runway 33 will also be installed during this stage of the planning period.

General airfield pavement maintenance, such as overlays, fog seals and slurry seals are planned in order to maintain the existing facilities. An ALP update is planned for the end of the Stage II planning period. This will allow for an opportunity to reflect all of the new improvements and address any new airport needs.

A portion of Honeyman Road is proposed for realignment between Skyway Drive West Lane Road during Stage II. A planning-level layout for the intersection is shown on the ALP, but further evaluation needs to be performed to develop the final intersection and roadway alignment. There are no planned or required improvements for the West Lane Road and Highway 30 intersection.

Stage III of the planning period encompasses the years 2014 through 2023. In addition to all of the planned hangar and associated apron taxilane development, a new access road and associated utilities on the east side of the airport are to be constructed. General airfield pavement maintenance will need to occur, as with Stage II. The runway lighting is scheduled for an upgrade to an LED system towards the end of Stage III. Also at the end of Stage III, a Master Plan update is scheduled in order to address the next 20 years of airport growth and development.

Columbia County has detention and water quality requirements for new impervious surfaces. These requirements have been reviewed and approximate costs for meeting these requirements have been developed. The costs were based on past project costs with similar requirements. All new impervious surfaces, including, but not limited to taxiways and hangars, have planning level costs included for detention and water quality facility construction.

Runway visibility minimums, runway protection zones, object free areas, safety areas and other standard airport dimensions are shown in the plan and in the runway data tables.

AIRPORT AIRSPACE PLAN

This plan shows the Part 77 Imaginary Surfaces for the ultimate layout of Scappoose Industrial Airpark with a USGS map as the background. Airport imaginary surfaces consist of five different types of surfaces. The surfaces for Scappoose Industrial Airpark are as follows:

Primary Surface: A rectangular surface with a width that varies for each runway (centered on the runway centerline) and a length that extends 200 feet beyond each end of the runway. The elevation of the primary surface corresponds to the elevation of the nearest point of the runway centerline. The width of the primary surface is 500 feet for Runway 15/33.

Approach Surface: A surface centered on the extended runway centerline, starting at each end of the primary surface, 200 feet beyond each end of the runway at a width equal to that of the primary surface and an elevation equal to that of the end of the runway; extending a horizontal distance of 5,000 feet at a slope of 20:1 for visual approaches (Runway 33) and 10,000 feet at a slope of 34:1 for nonprecision approaches (Runway 15) to a width of 1500 feet for Runway 33, and a width of 3,500 feet for Runway 15.

Transitional Surface: A sloping 7:1 surface that extends outward and upward at right angles to the runway centerline from the sides of the primary surface and the approach surfaces.

Horizontal Surface: An elliptical surface at an elevation 150 feet above the established airport elevation created by swinging 10,000-foot radius arcs from the center of each end of the primary surface of Runway 15/33.

Conical Surface: A surface extending outward and upward from the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

It is ideal to keep these surfaces clear of obstructions whenever possible. The Part 77 surfaces are the basis for protection of the airspace around the airport. Obstructions to these surfaces are identified in the Obstruction Data Tables (on sheets 3 and 4), along with the plan to address the described obstructions. Obstructions to the Part 77 surfaces were determined based on a review of the USGS map, a survey map provided by the National Oceanic Atmospheric Administration (NOAA) and the associated obstruction data sheet, which is based on a survey performed in November of 1994. Past obstruction removal and the FAA 5010 form were also used to identify the existing obstructions. Obstruction removal has been incorporated into the capital improvement program. When a tree is called out as an obstruction, in most cases there are a number of trees in the same area that will need to be removed. An updated obstruction survey is needed to specifically identify the trees that are obstructions to the Part 77 surfaces.

- Electrical Interference
- Concentrations of People
- Noise Impacts

Any of these activities can create safety concerns for airport users and people on the ground or can be impacted adversely by airport operations. It is important that these issues be addressed in the land use zoning and development around an airport.

The Scappoose Industrial Airpark and the adjacent land areas are regulated by the City of Scappoose Public Use Airport Safety and Compatibility Overlay and the Columbia County Aircraft Landing Field Overlay.

The City of Scappoose Public Use Airport Safety and Compatibility Overlay was based on the ODA model Public Use Airport Safety and Compatibility Overlay for an airport with instrument approaches. By enacting this overlay zone, the City has appropriately addressed the land use that is within their jurisdiction around the airport.

The City of Scappoose city limits terminate on the east and north sides of the airport property. Beyond these limits, the land use is under the jurisdiction of Columbia County. Columbia County has adopted an Aircraft Landing Field Overlay protects the Part 77 Surfaces with restrictions on height, lighting, glare, electrical interference, visibility, birds and places of public assembly. The primary concerns with the details of the overlay zone are that noise is not addressed and the approach surface dimensions are incorrect. Also, water impoundments, wetlands, and the RPZs are not specifically discussed. It is recommended that the County review the definition of the overlay area enacted by the City of Scappoose, and specifically considered addressing the shortfalls of their overlay definition.

Land use for Round Lake is under the jurisdiction of Columbia County. Ducks Unlimited is interested in improving and preserving the habitat for hunting. Although Round Lake is outside the runway approach surface, it is still inside the Part 77 Imaginary Surfaces. Bird attractions within the protected surfaces of the airport can increase the risk of bird strikes. The County and the Port need to work closely on this issue to assure that improvements to this habitat for hunting are not detrimental to the airport. The FAA and the ODA should both be consulted regarding this issue.

Obstruction Removal

The obstructions and the proposed course for addressing those obstructions have been identified and are shown on airport plan sheets 3, 4 and 5. As previously mentioned, the obstructions information incorporated into this plan was obtained from a USGS map, a survey map provided by the National Oceanic Atmospheric Administration (NOAA) and the associated obstruction data sheet, which is based on a survey performed in November of 1994. Past obstruction removal and the FAA 5010 form were also used to identify the existing ob-

structions. No survey was performed. The Runway 33 visual approach surface is clear of obstructions. The Runway 15 nonprecision approach surface has a number of obstructions. These obstructions are trees and Honeyman Road.

In addition to evaluating the Part 77 Approach Surface, threshold siting requirements, per FAA Advisory Circular (AC) 150/5300-13, Change 7, Appendix 2 were reviewed. The threshold siting requirements provide a basis for further evaluating the obstructions in an approach surface to determine if there is any need for displacement or relocation of the runway threshold. The trees identified as obstructions to the Runway 15 approach surface impact the threshold siting surface and need to be removed. It appears that the roadway does not impact the threshold siting surface for Runway 15. It is recommended that this roadway be surveyed, in conjunction with the next airport improvement project, to confirm its location and elevation relative to the new runway centerline and approach surface. If survey of the roadway within the threshold siting surface identifies the roadway as an obstruction, then either the roadway will needs to be relocated or the threshold will have to be relocated or displaced.

Airport Property Zoning

The City of Scappoose has zoned the airport property as "Public Use Airport". This zoning specifically protects the airport property from uses that may be undesirable or damaging to the airport. The ODA "Public Use Airport Zone" definition as provided in the Oregon Administrative Rule (OAR) 660 Division 13 was used as a model for this zoning definition.

Columbia County has zoned the airport property and some of the area around it as Airport Industrial. Though their definition does not follow the model, it addresses the limitations for development in the zoning area in order to protect the airport.

AIRPORT PROPERTY MAP

The Exhibit A "Property Map" has been updated to reflect current airport property interests and future property acquisitions. Several parcels on the east side could be acquired should they become available for purchase.

PORT OF ST.HELENS

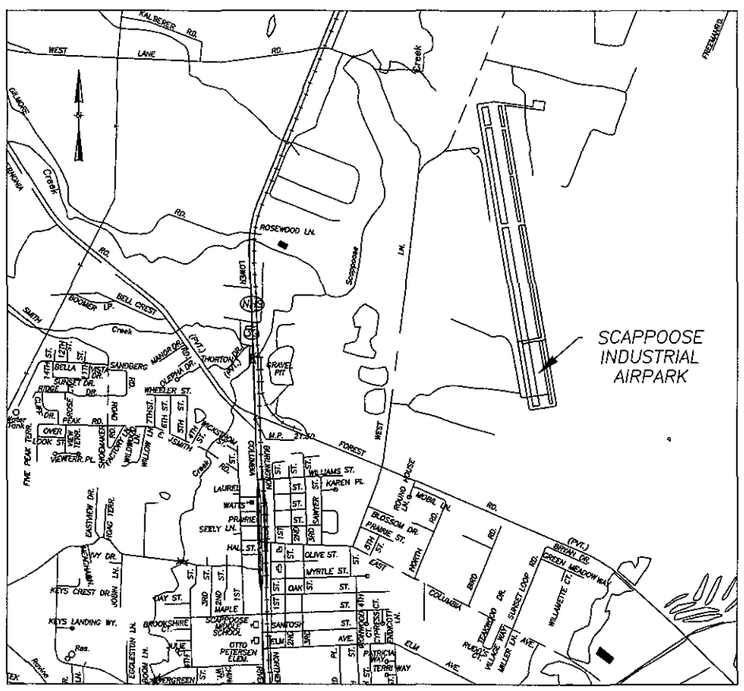
SCAPPOOSE INDUSTRIAL AIRPARK

AIRPORT MASTER PLAN

A.I.P. 3-41-0056-12

AUGUST 2004

VICINITY MAP

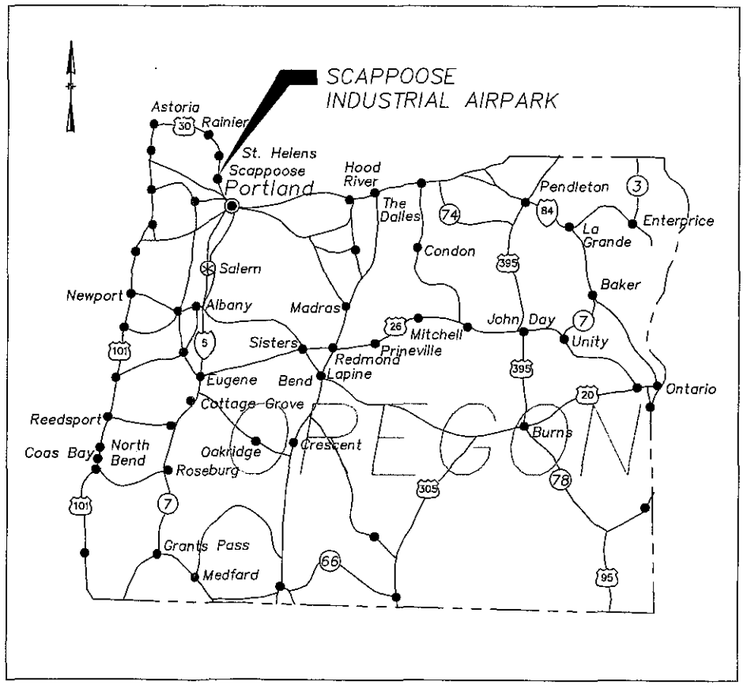


Port of St. Helens

SHEET INDEX

SHEET	DESCRIPTION
SHEET 1	COVER SHEET
SHEET 2	AIRPORT LAYOUT PLAN
SHEET 3	AIRPORT AIRSPACE PLAN
SHEET 4	RUNWAY 15/33 APPROACH ZONE PROFILES
SHEET 5	RUNWAY 15/33 PROTECTION ZONE PLAN & PROFILES
SHEET 6	LAND USE PLAN

LOCATION MAP



Coffman Airport Consultants

DATE	BY	REV#	REVISION	CK'D	APPR.

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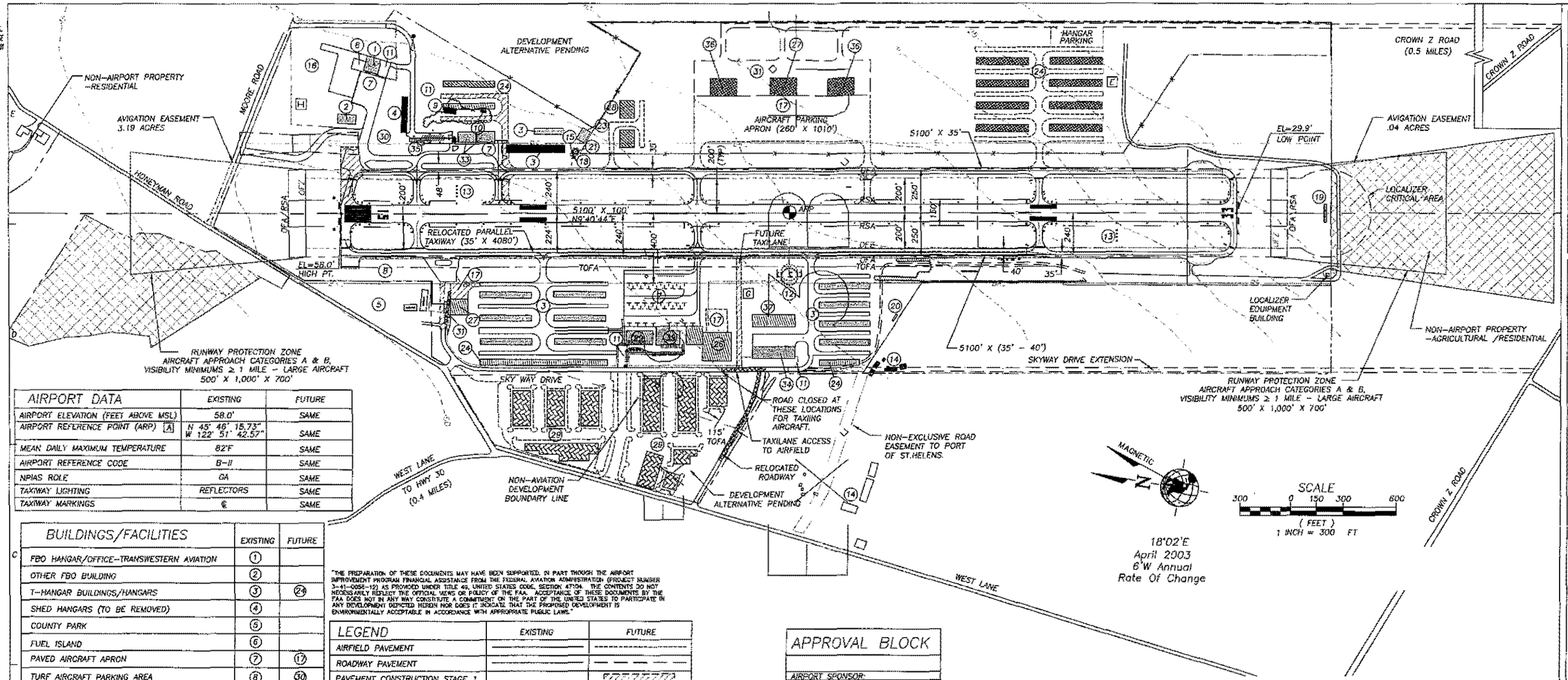
DRAWN BY: CMB
CHECKED BY: LAM
APPROVED BY: REA

DRAWING FILE NAME: 30398-AIRP-CS01.DWG

SHEET 1/6
1

SECTION, TOWNSHIP, RANGE:



AIRPORT DATA	EXISTING	FUTURE
AIRPORT ELEVATION (FEET ABOVE MSL)	58.0'	SAME
AIRPORT REFERENCE POINT (ARP) [A]	N 45° 46' 15.73" W 122° 51' 42.57"	SAME
MEAN DAILY MAXIMUM TEMPERATURE	82°F	SAME
AIRPORT REFERENCE CODE	B-II	SAME
NPIAS ROLE	GA	SAME
TAXIWAY LIGHTING	REFLECTORS	SAME
TAXIWAY MARKINGS	℄	SAME

BUILDINGS/FACILITIES	EXISTING	FUTURE
FBO HANGAR/OFFICE-TRANSWESTERN AVIATION	1	
OTHER FBO BUILDING	2	
T-HANGAR BUILDINGS/HANGARS	3	24
SHED HANGARS (TO BE REMOVED)	4	
COUNTY PARK	5	
FUEL ISLAND	6	
PAVED AIRCRAFT APRON	7	17
TURF AIRCRAFT PARKING AREA	8	30
RESIDENCE/GARAGE	9	
MOBILE HOME (TO BE REMOVED)	10	
AUTO PARKING	11	31
WIND CONE/SEGMENTED CIRCLE	12	
PRECISION APPROACH PATH INDICATOR	13	
FARM BUILDINGS & RESIDENCES	14	
STORAGE SHED	15	
FBO-PRIVATE PROPERTY	16	
ELECTRICAL BUILDING	18	
LOCALIZER ANTENNA	19	
AUTOMATED SURFACE OBSERVING SYSTEM	20	
ROTATING BEACON ON TOWER	21	
SPORT COPTER	22	
SHED HANGAR PRIVATELY OWNED	23	
OREGON AERO HANGAR EXPANSION		26
FBO HANGAR		27
EXECUTIVE HANGAR		28
SCAPPOOSE AIRPARK INDUSTRIAL BUSINESS PARK		29
OREGON AERO	32	
COMPOSITES UNLIMITED	33	
SHERPA AIRCRAFT MANUFACTURING	34	
NORTHWEST ANTIQUE AIRPLANE CLUB	35	
CONVENTIONAL HANGAR		36
SHERPA AIRCRAFT HANGAR EXPANSION		37

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LEGEND	EXISTING	FUTURE
AIRFIELD PAVEMENT		
ROADWAY PAVEMENT		
PAVEMENT CONSTRUCTION STAGE 1		
PAVEMENT CONSTRUCTION STAGE 2		
PAVEMENT CONSTRUCTION STAGE 3		
TAXIWAY HOLDLINE	---	---
PAVEMENT REMOVAL		
BUILDINGS		
BUILDING CONSTRUCTION STAGE 1		
BUILDING CONSTRUCTION STAGE 2		
BUILDING CONSTRUCTION STAGE 3		
BUILDING REMOVAL		
EASEMENT		
ACQUISITION BOUNDARY		
PROPERTY LINE		
NON-AVIATION DEV. BOUNDARY LINE		
BUILDING RESTRICTION LINE	BRL	
R/W OBJECT FREE AREA	OFZ	
R/W SAFETY AREA	OFA	
R/W OBJECT FREE ZONE	RSA	
RUNWAY PROTECTION ZONE		
TOPOGRAPHIC CONTOUR	35	
SURVEY MONUMENT [B]	•	
AIRPORT FENCE		
VEHICLE GATE		
AVIGATION EASEMENT		
AIRPORT REFERENCE POINT	ARP	
ROTATING BEACON		
REIL	•	

APPROVAL BLOCK
AIRPORT SPONSOR:
Signature
Title Date
FEDERAL AVIATION ADMINISTRATION:
Signature
Title Date
Approval letter dated _____

NOTES:

[A] COORDINATE DATA FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION SERVICE OBSTRUCTION FOR SCAPPOOSE INDUSTRIAL AIRPARK (NOV. 1994). THEN MODIFIED BASED ON LENGTH OF RUNWAY EXTENSION. HORIZONTAL DATUM NAD 83. VERTICAL DATUM NAVD 88.

[B] A TOPOGRAPHIC SURVEY HAS NOT BEEN PERFORMED. BRASS CAP SET IN CONCRETE.

[C] POWER SUPPLIED TO AIRPORT BY COLUMBIA RIVER P.U.D.

[D] NO WIND DATA IS AVAILABLE. WIND IS NOTED AS GENERALLY FOLLOWING RUNWAY ALIGNMENT. NORTHERLY AND SOUTHERLY WINDS OCCUR WITH APPROXIMATELY EQUAL FREQUENCY.

[E] PROTECTED FROM 100-YEAR FLOOD BY LEVEE. SUBJECT TO POSSIBLE FAILURE OR OVERTOPPING DURING LARGE FLOOD (SOURCE; FEMA MAP).

[F] BUILDING RESTRICTION LINE SHOWN FOR RUNWAY 15-33 IS BASED ON A 21 FOOT HIGH BUILDING.

[G] CURRENTLY USED FOR HELICOPTER PARKING.

MODIFICATIONS TO FAA STANDARDS:

SOME HOLD LINES AND RUNWAY-TO-TAXIWAY SEPARATION ON WEST SIDE ARE 15 FEET LESS THAN 240' STANDARDS FOR A B-II RUNWAY.

RUNWAY DATA		R/W 15		R/W 33	
		EXISTING	FUTURE	EXISTING	FUTURE
ARC		B-II	SAME	B-II	SAME
CRITICAL AIRCRAFT		SM. BUSINESS JET	SAME	SM. BUSINESS JET	SAME
RUNWAY DIMENSIONS (L/W)		5100' x 100'	SAME	5100' x 100'	SAME
PAVEMENT TYPE		ASPHALT CONCRETE	SAME	ASPHALT CONCRETE	SAME
PAVEMENT DESIGN STRENGTH		SW-30,000LBS/ DW-50,000LBS	SAME	SW-30,000LBS/ DW-50,000LBS	SAME
RUNWAY LIGHTING		MIRL	SAME	MIRL	SAME
RUNWAY MARKING		NON-PRECISION	SAME	VISUAL	SAME
EFFECTIVE GRADIENT (%)		0.56	SAME	0.56	SAME
VISUAL APPROACH AIDS		REILS, PAPI, ROTATING BEACON	SAME	PAPI, ROTATING BEACON	SAME
INSTRUMENT APPROACH AIDS		LOCALIZER, DME	SAME	NONE	SAME
RSA SAFETY AREA (L/W)		5700' X 150'	SAME	5700' X 150'	SAME
OFA DIMENSIONS (L/W)		5700' X 500'	SAME	5700' X 500'	SAME
OFZ DIMENSIONS (L/W)*		5500' X 400'	SAME	5500' X 400'	SAME
RUNWAY END COORDINATES NAD 83		N 45° 46' 40.41" W 122° 51' 49.65"	SAME	N 45° 45' 51.05" W 122° 51' 35.49"	SAME
APPROACH TYPE		NON-PRECISION	SAME	VISUAL	SAME
APPROACH SLOPES	FAR PART 77	34:1	SAME	20:1	20:1
	ACTUAL	17:1	SAME	50:1	29:1
APPROACH VISIBILITY MIN.		> 1 MILE	SAME	> 1 MILE	SAME
THRESHOLD DISPLACEMENT		NONE	SAME	NONE	SAME
THRESHOLD RELOCATION		NONE	SAME	NONE	SAME
DECLARED DISTANCES	TORA	5100'	5100'	5100'	5100'
	TODA	5100'	5100'	5100'	5100'
	ASDA	5100'	5100'	5100'	5100'
	LDA	5100'	5100'	5100'	5100'

* NO OFZ OBJECT PENETRATIONS.

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wpacific.com
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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
AIRPORT LAYOUT PLAN

SCAPPOOSE OREGON

SCALE: 1"=300'

PROJECT NO. 30398

DRAWING FILE NAME: 30398-AIRP-LP01

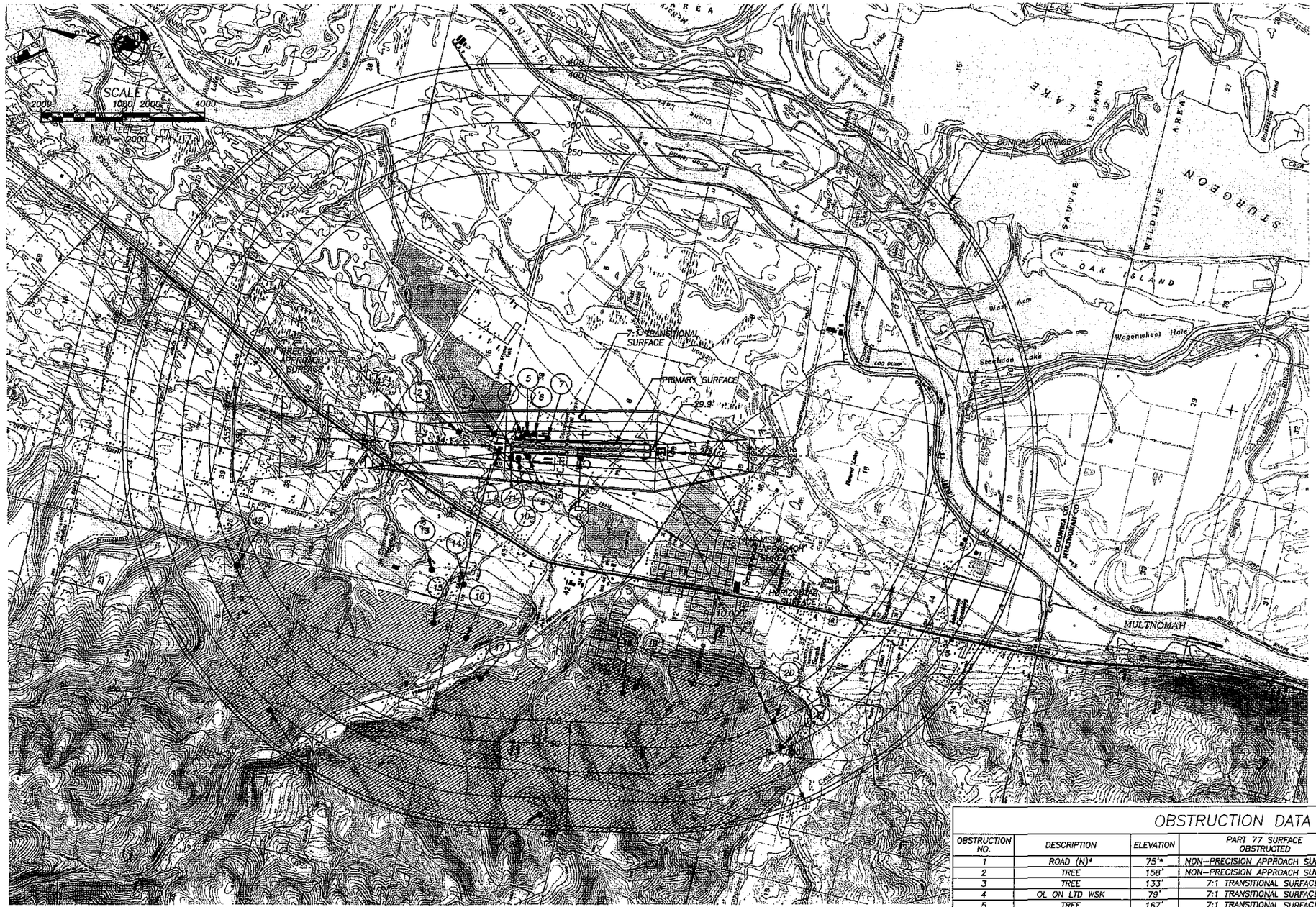
Coffman Airport Consultants

DESIGNED BY: LAM	CHECKED BY: REA
DRAWN BY: CMB	APPROVED BY: REA
LAST EDIT: 12/02/03	PLOT DATE: 08/27/04

DATE	BY	REV#	REVISION	CK'D	APR

SHEET 2/6

2



NOTES:

1. OBSTRUCTIONS LISTED INFORMATION WAS OBTAINED FROM NOAA AIRPORT OBSTRUCTION CHART AND AERONAUTICAL DATA SHEET, USGS QUAD MAPS, AND AIRPORT MANAGEMENT. NO SURVEY WAS PERFORMED.
2. A GROWTH ALLOWANCE WAS NOT INCORPORATED INTO THE OBSTRUCTION REVIEW.
3. THE FOLLOWING HEIGHTS WERE ADDEO TO THE SURFACE ELEVATION FOR CERTAIN GROUND FEATURES:
   10FT FOR A PRIVATE ROAD
   15FT FOR A PUBLIC ROAD
   17FT FOR AN INTERSTATE ROAD
   23FT FOR RAILROAD TRACKS
4. ALL ELEVATIONS ARE ON THE NAVD 88 DATUM, WITH THE EXCEPTION OF THE USGS MAP, WHICH IS NGVD 29.
5. PART 77 SURFACES PROTECTED BY CITY OF SCAPPOOSE AND COLUMBIA COUNTY AIRPORT OVERLAY ZONE.
6. SEE SHEET 4 FOR A MORE DETAILED VIEW OF CLOSE-IN OBSTRUCTIONS.

LEGEND:

● OBSTRUCTIONS

GROUP AND MULTIPLE OBSTRUCTIONS

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OBSTRUCTION DATA TABLE

OBSTRUCTION NO.	DESCRIPTION	ELEVATION	PART 77 SURFACE OBSTRUCTED	SURFACE ELEVATION	PENETRATION	PROPOSED DISPOSITION OF OBSTRUCTION
1	ROAD (N)*	75'*	NON-PRECISION APPROACH SURFACE	64'	11'	SEE NOTE BELOW
2	TREE	158'	NON-PRECISION APPROACH SURFACE	113'	45'	REMOVE
3	TREE	133'	7:1 TRANSITIONAL SURFACE	85'	48'	REMOVE
4	OL ON LTD WSK	79'	7:1 TRANSITIONAL SURFACE	69'	10'	TO REMAIN
5	TREE	167'	7:1 TRANSITIONAL SURFACE	89'	78'	REMOVE
6	TREE	174'	7:1 TRANSITIONAL SURFACE	85'	89'	REMOVE
7	APBN	98'	7:1 TRANSITIONAL SURFACE	62'	36	REMOVE
8	OL ON LTD WSK	72'	7:1 TRANSITIONAL SURFACE	56'	16'	TO REMAIN
9	OL ON LTD WSK	87'	7:1 TRANSITIONAL SURFACE	73'	14'	TO REMAIN
10	TREE	180'	7:1 TRANSITIONAL SURFACE	82'	98'	REMOVE
11	TREE	183'	7:1 TRANSITIONAL SURFACE	82'	101'	REMOVE
12	GROUND SURFACE	200'-220'	CONICAL SURFACE	VARIES	VARIES	FIXED; NO ACTION
13	TREE	273'	HORIZONTAL SURFACE	208'	65'	NO ACTION
14	TREE	253'	HORIZONTAL SURFACE	208'	45'	NO ACTION
15	TREE	363'	HORIZONTAL SURFACE	208'	155'	NO ACTION
16	TREE	364'	HORIZONTAL SURFACE	208'	156'	NO ACTION
17	TREE	408'	HORIZONTAL SURFACE	208'	200'	NO ACTION
18	TREE	620'	HORIZONTAL SURFACE	208'	412'	NO ACTION
19	TREE	549'	HORIZONTAL SURFACE	208'	341'	NO ACTION
20	GROUND SURFACE	200'-240'	CONICAL SURFACE	VARIES	VARIES	FIXED; NO ACTION
21	GROUND SURFACE	250'-265'	CONICAL SURFACE	VARIES	VARIES	FIXED; NO ACTION
22	GROUND SURFACE	200'-860'	CONICAL SURFACE	VARIES	VARIES	FIXED; NO ACTION
23	GROUND SURFACE	200'-560'	CONICAL SURFACE	VARIES	VARIES	FIXED; NO ACTION

NOTE: * ROAD ELEVATION IS AN APPROXIMATED AND NEEDS TO BE SURVEYED FOR CONFIRMATION PRIOR TO ADDRESSING IT AS AN OBSTRUCTION.

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
AIRPORT AIRSPACE PLAN

SCAPPOOSE, OREGON
SCALE: 1"=2000'
PROJECT NO. 30398
DRAWING FILE NAME: 30398-AIRP-AS01

Coffman Airport Consultants

DESIGNED BY: LAM
DRAWN BY: CMB
LAST EDIT: 08/19/03
CHECKED BY: REA
APPROVED BY:
PLOT DATE: 08/27/04

DATE	BY	REV#	REVISION	CK'D/APPR.

SHEET 3/6
3

G INDEX:
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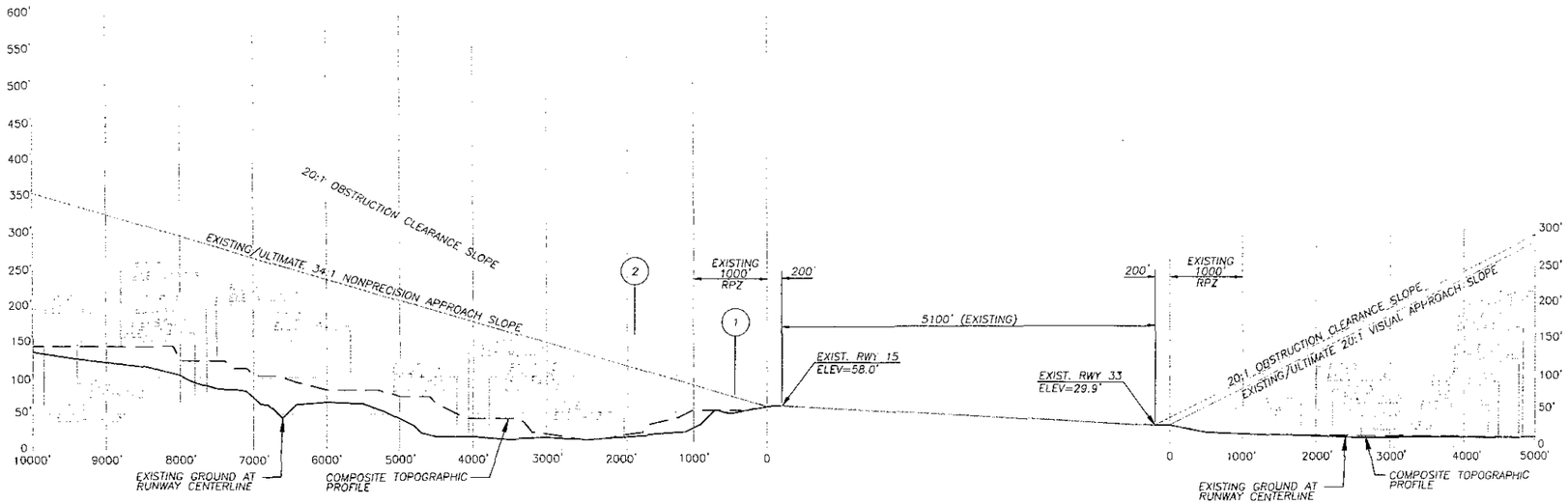
0326-1021-0307
Office: SEATTLE | System: WHP-SEA-BRCY121 | User: CBONTEMPO



RUNWAY 15-33 APPROACH ZONE PROFILE

SCALE: HORIZONTAL 1"=1000'
VERTICAL 1"=100'

OBSTRUCTION DATA TABLE

OBSTRUCTION NO.	DESCRIPTION	ELEVATION	PART 77 SURFACE OBSTRUCTED	SURFACE ELEVATION	PENETRATION	PROPOSED DISPOSITION OF OBSTRUCTION
1	ROAD (N)*	75'*	NON-PRECISION APPROACH SURFACE	64'	11'	SEE NOTE BEGIN
2	TREE	158'	NON-PRECISION APPROACH SURFACE	113'	45'	REMOVE

NOTE: * ROAD ELEVATION IS AN APPROXIMATED AND NEEDS TO BE SURVEYED FOR CONFIRMATION PRIOR TO ADDRESSING IT AS AN OBSTRUCTION.

NOTES:

1. OBSTRUCTION INFORMATION WAS OBTAINED FROM THE NOAA AIRPORT OBSTRUCTION CHART AND AERONAUTICAL DATA SHEET, USGS QUAD MAPS, AND AIRPORT MANAGEMENT. NO SURVEY WAS PERFORMED.
2. SEE SHEET 3 FOR PRIMARY SURFACE & ADDITIONAL APPROACH SURFACE OBSTRUCTIONS.
3. THE FOLLOWING HEIGHTS WERE ADDED TO THE SURFACE ELEVATION FOR CERTAIN ITEMS:
   10FT FOR A PRIVATE ROAD
   15FT FOR A PUBLIC ROAD
   17FT FOR AN INTERSTATE ROAD
   23FT FOR RAILROAD TRACKS
4. ALL ELEVATIONS ARE ON THE NAVD 88 DATUM, WITH THE EXCEPTION OF THE USGS MAP, WHICH IS NGVD 29.

SCALE
1000 0 500 1000 2000
(FEET)
1 INCH = 1000 FT

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
RUNWAY 15/33 APPROACH
ZONE PROFILES

SCAPPOOSE OREGON
SCALE: 1"=1000'
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Coffman Airport Consultants

DESIGNED BY: LAM	CHECKED BY:		
DRAWN BY: CMB	APPROVED BY: REA		
LAST EDIT: 08/18/03	PLOT DATE: 08/27/04		
DATE	BY	REV#	REVISION
			CK'D/APPR

SHEET 4/6
4

2 INDEX:
OTHERASE
30398-AIRP-PP01
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WG INDEX:
OTHERBASE
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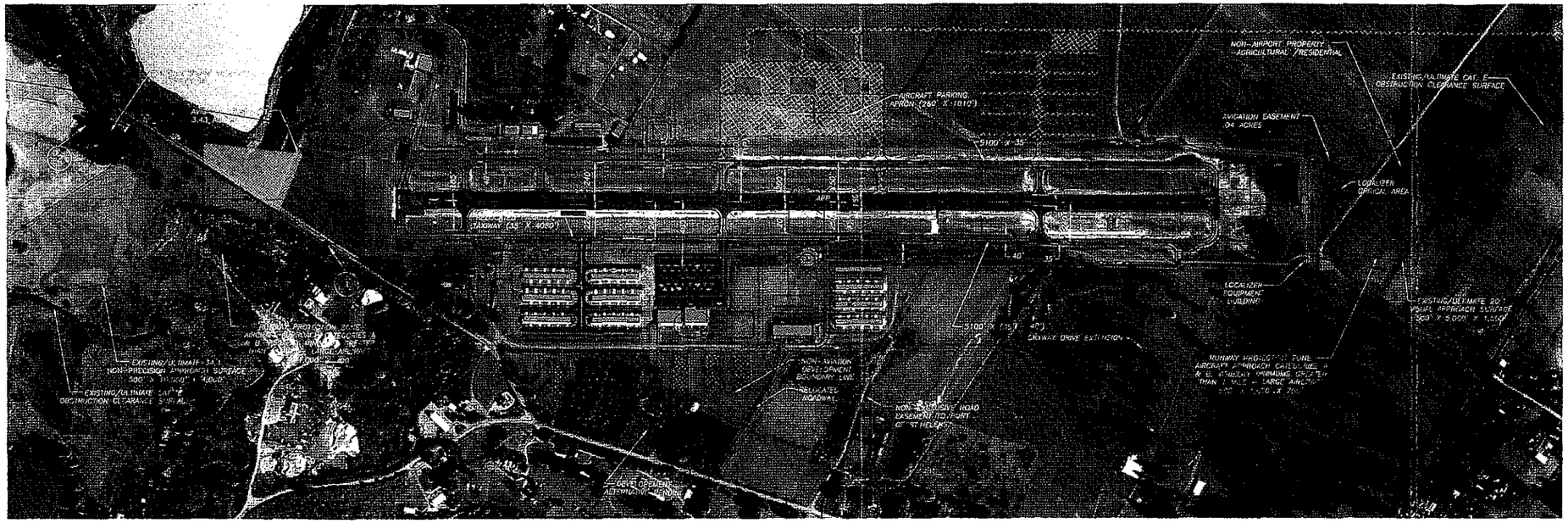
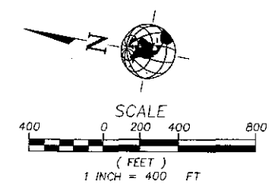
30398-RELF-OBST



RUNWAY 15-33 PROTECTION ZONE PLAN

SCALE: HORIZONTAL 1"=400'



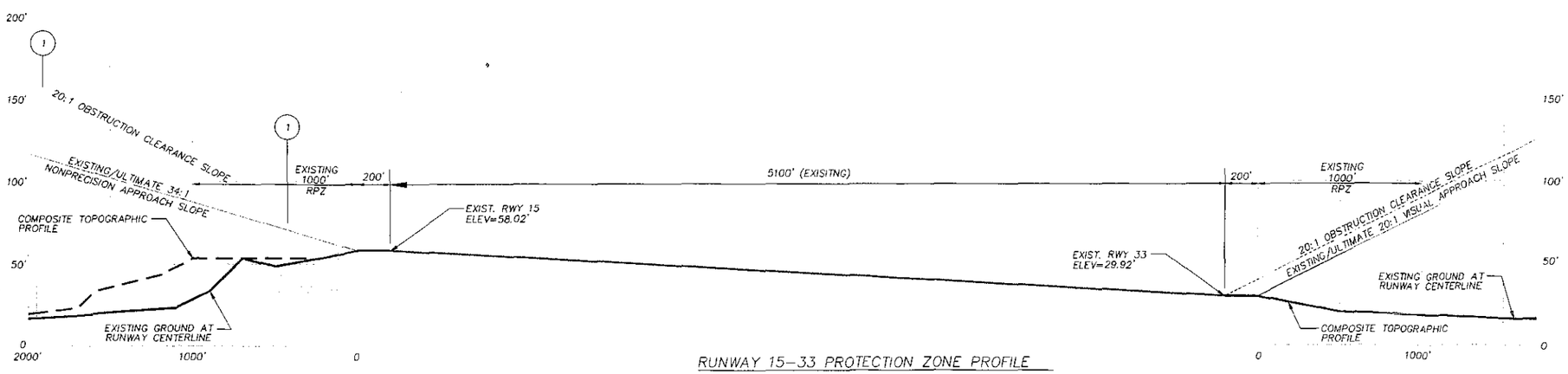
OBSTRUCTION DATA TABLE

OBSTRUCTION NO.	DESCRIPTION	ELEVATION	PART 77 SURFACE OBSTRUCTED	SURFACE ELEVATION	PENETRATION	PROPOSED DISPOSITION OF OBSTRUCTION
1	ROAD (N)*	75'*	NON-PRECISION APPROACH SURFACE	64'	11'	SEE NOTE BEGIN
2	TREE	158'	NON-PRECISION APPROACH SURFACE	113'	45'	REMOVE

NOTE: * ROAD ELEVATION IS AN APPROXIMATED AND NEEDS TO BE SURVEYED FOR CONFIRMATION PRIOR TO ADDRESSING IT AS AN OBSTRUCTION.

NOTES:

1. OBSTRUCTION INFORMATION WAS OBTAINED FROM THE NOAA AIRPORT OBSTRUCTION CHART AND AERONAUTICAL DATA SHEET, USGS QUAD MAPS, AND AIRPORT MANAGEMENT. NO SURVEY WAS PERFORMED.
2. SEE SHEET 3 FOR PRIMARY SURFACE & ADDITIONAL APPROACH SURFACE OBSTRUCTIONS.
3. THE FOLLOWING HEIGHTS WERE ADDED TO THE SURFACE ELEVATION FOR CERTAIN ITEMS:
   10FT FOR A PRIVATE ROAD
   15FT FOR A PUBLIC ROAD
   17FT FOR AN INTERSTATE ROAD
   23FT FOR RAILROAD TRACKS
4. ALL ELEVATIONS ARE ON THE NAVD 88 DATUM. WITH THE EXCEPTION OF THE USGS MAP, WHICH IS NGVD 29.



RUNWAY 15-33 PROTECTION ZONE PROFILE

SCALE: HORIZONTAL 1"=400'
VERTICAL 1"=40'

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
RUNWAY 15/33 PROTECTION ZONE PLAN & PROFILES

SCAPPOOSE OREGON

SCALE: 1"=400'

DRAWING FILE NAME: 30398-AIRP-PP02

PROJECT NO. 30398

Coffman Airport Consultants

DESIGNED BY: LAM	CHECKED BY:				
DRAWN BY: CMB	APPROVED BY: REA				
LAST EDIT: 08/18/03	PLOT DATE: 08/27/04				
DATE	BY	REV#	REVISION	CK'D	APPR.

SHEET 5/6

5

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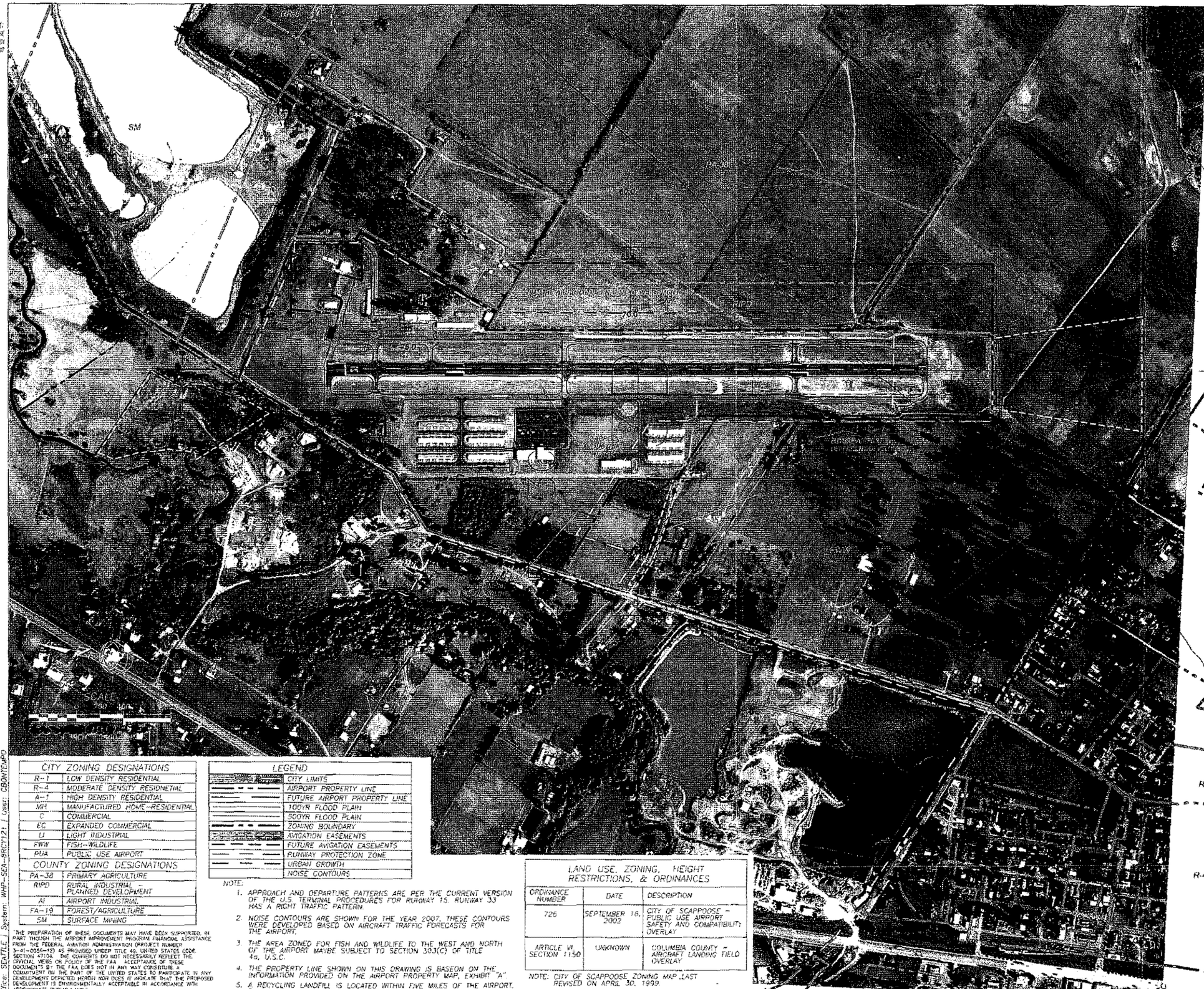

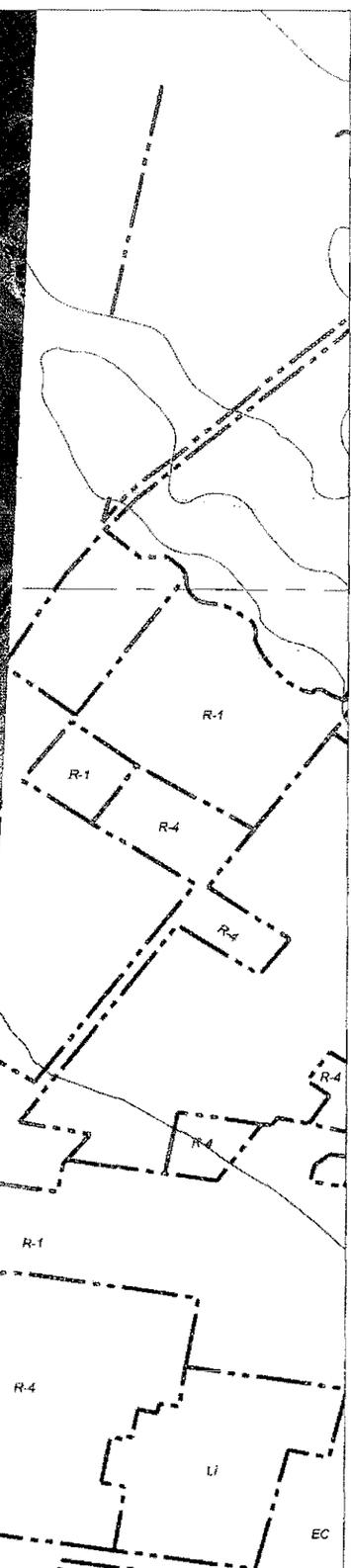

CITY ZONING DESIGNATIONS	
R-1	LOW DENSITY RESIDENTIAL
R-4	MODERATE DENSITY RESIDNETIAL
A-1	HIGH DENSITY RESIDENTIAL
MH	MANUFACTURED HOME-RESIDENTIAL
C	COMMERCIAL
EC	EXPANDED COMMERCIAL
LI	LIGHT INDUSTRIAL
FWW	FISH-WILDLIFE
PUA	PUBLIC USE AIRPORT
COUNTY ZONING DESIGNATIONS	
PA-38	PRIMARY AGRICULTURE
RIPD	RURAL INDUSTRIAL - PLANNED DEVELOPMENT
AI	AIRPORT INDUSTRIAL
FA-19	FOREST/AGRICULTURE
SM	SURFACE MINING

LEGEND	
	CITY LIMITS
	AIRPORT PROPERTY LINE
	FUTURE AIRPORT PROPERTY LINE
	100YR FLOOD PLAIN
	500YR FLOOD PLAIN
	ZONING BOUNDARY
	AVIGATION EASEMENTS
	FUTURE AVIGATION EASEMENTS
	RUNWAY PROTECTION ZONE
	URBAN GROWTH
	NOISE CONTOURS

NOTE:

1. APPROACH AND DEPARTURE PATTERNS ARE PER THE CURRENT VERSION OF THE U.S. TERMINAL PROCEDURES FOR RUNWAY 15. RUNWAY 33 HAS A RIGHT TRAFFIC PATTERN.
2. NOISE CONTOURS ARE SHOWN FOR THE YEAR 2007. THESE CONTOURS WERE DEVELOPED BASED ON AIRCRAFT TRAFFIC FORECASTS FOR THE AIRPORT.
3. THE AREA ZONED FOR FISH AND WILDLIFE TO THE WEST AND NORTH OF THE AIRPORT MAYBE SUBJECT TO SECTION 303(C) OF TITLE 4a, U.S.C.
4. THE PROPERTY LINE SHOWN ON THIS DRAWING IS BASEDON ON THE INFORMATION PROVIDED ON THE AIRPORT PROPERTY MAP, EXHIBIT "A".
5. A RECYCLING LANDFILL IS LOCATED WITHIN FIVE MILES OF THE AIRPORT. THIS LANDFILL IS NOT USED FOR SOLID WASTE.

LAND USE, ZONING, HEIGHT RESTRICTIONS, & ORDINANCES		
ORDINANCE NUMBER	DATE	DESCRIPTION
726	SEPTEMBER 16, 2002	CITY OF SCAPPOOSE - PUBLIC USE AIRPORT SAFETY AND COMPATIBILITY OVERLAY
ARTICLE VI, SECTION 1150	UNKNOWN	COLUMBIA COUNTY - AIRCRAFT LANDING FIELD OVERLAY

NOTE: CITY OF SCAPPOOSE ZONING MAP LAST REVISED ON APRIL 30, 1999.

"THE PREPARATION OF THESE DOCUMENTS MAY HAVE BEEN SUPPORTED, IN PART THROUGH THE AIRPORT IMPROVEMENT PROGRAM FINANCIAL ASSISTANCE FROM THE FEDERAL AVIATION ADMINISTRATION (PROJECT NUMBER 3-41-0056-12) 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 THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

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PORT OF ST. HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
LAND USE PLAN

SCAPPOOSE, OREGON
SCALE: 1" = 400'
PROJECT NO. 30398
DRAWING FILE NAME: 30398-AIRP-LU01

Coffman Airport Consultants

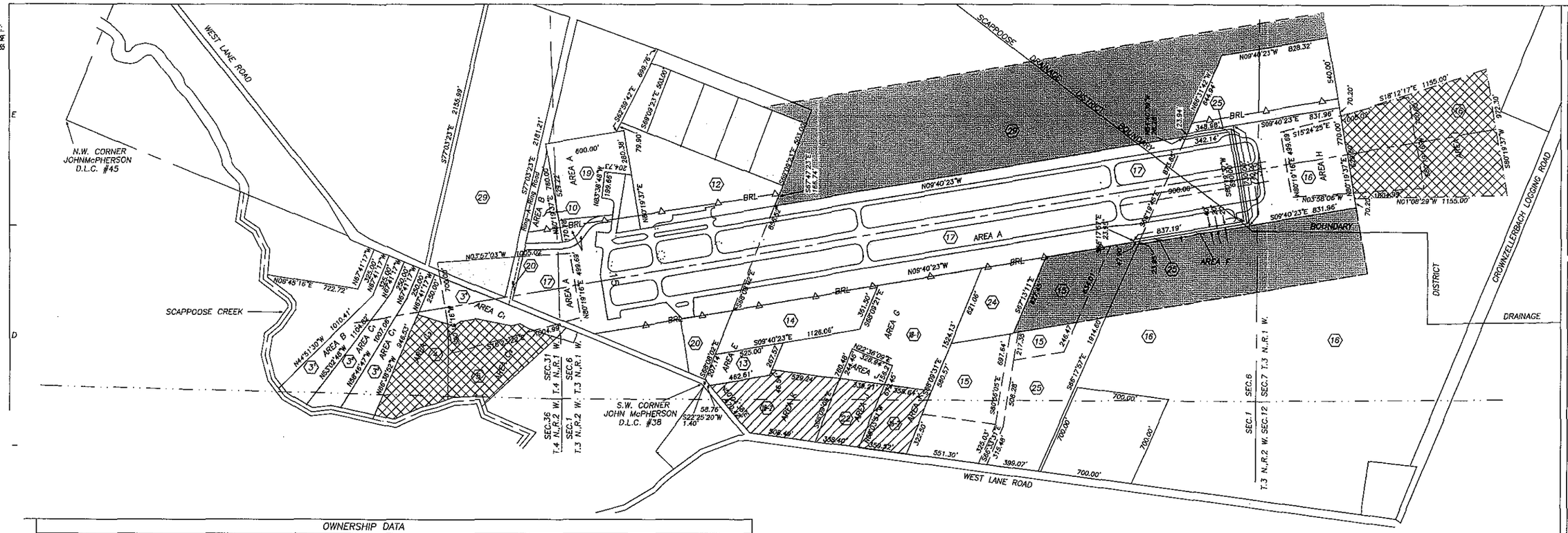
DESIGNED BY: LAM
DRAWN BY: GMB
LAST EDIT: 08/18/03
CHECKED BY: REA
APPROVED BY: REA
PLOT DATE: 09/27/04
CK'D/APPR

DATE	BY	REV#	REVISION

SHEET 6/6
6

Office: SEATTLE | System: WHP-SEA-BRCY121 | User: CBONYCUPO
AVG INDEX:
DRAWING
ISSUED
SCAPPOOSE

WG INDEX:
07/09/04
97065



OWNERSHIP DATA

	PARCEL	LAND OWNER	ACRES	RECORDED DATE	RECORDED BOOK	RECORDED PAGE	INTEREST ACQUIRED	INTEREST REIMBURSED	EASEMENT TYPE	ACRES ACQU.	AREA	PREVIOUS OWNER	LAND AQUISITION
PORT OF ST.HELENS FEE	3	PORT OF ST.HELENS	5.00	06-03-80	230	867	FEE	FEE		5.00	B	BEEBE & MELTON	A.D.A.P 01
	3	PORT OF ST.HELENS	5.00	05-12-80	230	536	EASEMENT/ FEE	EASEMENT/ FEE		5.00	C_1	BEEBE & MELTON	A.D.A.P 01 & AIP 01
	3	PORT OF ST.HELENS	5.00	05-12-80	230	536	EASEMENT/ FEE	EASEMENT/ FEE		5.00	C_1	BEEBE & MELTON	A.D.A.P 01 & AIP 01
	3	PORT OF ST.HELENS	5.00	05-12-80	230	539	EASEMENT/ FEE	EASEMENT/ FEE		5.00	C_1	BEEBE & MELTON	A.D.A.P 01 & AIP 01
	10	PORT OF ST.HELENS	2.20	08-23-78	219	615	FEE	FEE		2.20	B	GENE & EILEEN MCVICKER	A.D.A.P 01
	13	PORT OF ST.HELENS	2.70	09-20-78	F78	7274	FEE	FEE		2.70	E	ROBERT & SHERYL ADAMS	A.D.A.P 02
	14	PORT OF ST.HELENS	8.00	06-18-79	224	570	FEE	FEE		8.00	E	L.D. & THELMA CODY	A.D.A.P 02
	25	PORT OF ST.HELENS	0.89	05-13-81	237	15	FEE	FEE		0.89	F	ARBOR ROSE FARMS	A.D.A.P 02
	8-1	PORT OF ST.HELENS	15.94	01-04-77	215	922	FEE	FEE		15.94	G	DONALD & EMMA MEIER	A.D.A.P. 02
	8-2	PORT OF ST.HELENS	12.25	01-04-77	215	922	FEE	FEE		12.25	K	DONALD & EMMA MEIER	PORT FUNDING ONLY
	16	PORT OF ST.HELENS	14.71	11-10-82	CIR.	CT.	FEE	FEE		14.71	H&I	WAGNER RANCH	A.I.P. 3-41-0056-01
	22	PORT OF ST.HELENS	5.40	04-27-81	236	684	FEE	FEE		5.40	J	JEANNE FREDRICKS	PORT FUNDING ONLY
	12	PORT OF ST.HELENS	12.34	09-14-89	F89	5391	FEE	FEE		12.34	–	IRVIN & MARLEA LEFFLER	A.I.P. 3-42-0056-05
	16	PORT OF ST.HELENS	12.45	11-14-96	F96	11889	FEE	FEE		12.45	H&I	STANLEY WAGNER	A.I.P. 3-41-0056-08
	17	PORT OF ST.HELENS	80.43	10-30-72	189	13	FEE	N/A		80.43	A	COLUMBIA COUNTY	
	20	PORT OF ST.HELENS	2.85	06-04-76	206	676	FEE	N/A		2.85	–	COLUMBIA COUNTY	
	24	PORT OF ST.HELENS	6.00	02-12-91	F91	0759	FEE	N/A		6.00	–	ELIZABETH JOHNSON	
PORT OF ST.HELENS EASEMENT	4	JAMES & BARBARA FISHER	7.13	11-21-78	220	970	EASEMENT	EASEMENT	AVIGATION	2.70	C_2		A.D.A.P. 01
	5	GEORGE DUGAN (TRUSTEE)	8.15	10-18-73	194	701	EASEMENT	EASEMENT	AVIGATION	4.20	C_2		A.D.A.P. 01
	16	WAGNER RANCH	177.95	11-10-82	CIR.	CT.	EASEMENT	EASEMENT	AVIGATION	21.00	H&I		A.I.P. 3-41-0056-01
PARCELS TO BE ACQUIRED	16	STANLEY WAGNER	38.50	09-24-90	F90	5502	FEE	N/A		21.70	H&I		
	16	STANLEY WAGNER	38.50	09-24-90	F90	5502	EASEMENT	N/A	AVIGATION	0.14	H&I		
	15	ARBOR ROSE FARMS	34.52	07-01-93	F93	10730	FEE	N/A		8.73	F		
	29	NORTHWEST AGGREGATE CO.	200.00	02-15-95	F95	01166	FEE	N/A		58.99	A		
	29	NORTHWEST AGGREGATE CO.	200.00	02-15-95	F95	01166	EASEMENT	N/A	AVIGATION	3.19	A		
PORT OF ST.HELENS PROPERTY SOLD	19	ELIZABETH K. JOHNSON	5.99	02-12-91	F91	0758	FEE	N/A		5.99	–	PORT OF ST.HELENS	

NOTE:

ALL BEARINGS AND DISTANCES SHOWN ON THE ANNEXED MAP HAVE BEEN ROTATED AND ADJUSTED TO FIT COUNTY SURVEY NUMBER 1946, BY HAGEDORN ON 2-28-82, AND MAY NOT AGREE WITH DEED DATA.

BASEMAP FOR PROPERTY INFORMATION PROVIDED BY DEWEY SURVEYING, INC.

AREA LETTER DESIGNATIONS HAVE BEEN RETAINED IN ORDER TO MATCH PREVIOUS FAA AND RECORD DOCUMENTATION.

MAGNETIC
18°02'E
April 2003
6'W Annual
Rate Of Change

SCALE
400 0 200 400 800
(FEET)
1 INCH = 400 FT

LEGEND:

- EXISTING FEE OWNERSHIP (210.31 ACRES)
- EXISTING AVIGATION EASEMENT
- FEE OWNERSHIP TO BE ACQUIRED
- AVIGATION EASEMENT TO ACQUIRE
- AREA TO BE ACQUIRED IF AVAILABLE
- ACQUIRED BY PORT FUNDING ONLY
- AIRPORT PROPERTY LINE
- PARCEL BOUNDARY
- RUNWAY CENTERLINE
- RUNWAY PROTECTION ZONE
- BRL — BUILDING RESTRICTION LINE
- SECTION & DONATION LAND CLAIM LINES
- AREA TO BE ACQUIRED

AIRPORT EXHIBIT A

PORT OF ST. HELENS
SCAPPOOSE INDUSTRIAL AIRPARK

FEDERAL AVATIONADMINISTRATIONAPPROVAL

APPROVED BY _____

DATE _____

PORT OF ST. HELENS APPROVAL

APPROVED BY _____

DATE _____

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK
EXHIBIT A

OREGON

SCAPPOOSE
SCALE: 1"=400'

PROJECT NO. 30398

DRAWING FILE NAME: 30398-airp-exa

Coffman Airport Consultants

DESIGNED BY: LAM	CHECKED BY: REA
DRAWN BY: CMB	APPROVED BY:
LAST EDIT: 08/27/04	PLOT DATE: 08/31/04

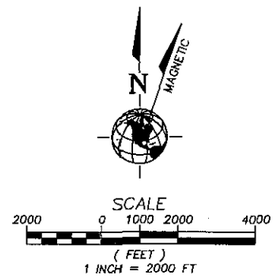
DATE	BY	REV#	REVISION	CK'T	APPR.

SHEET
1

Office: SEATTLE | System: WHP-SEA-BRCY121 | User: CBONTEMPO

DWG INDEX:
SCAPP0052002
SCAPP0052007

EXISTING NOISE CONTOURS – 2002



ULTIMATE NOISE CONTOURS – 2007

DESIGNED BY:		CHECKED BY:	LAM		
DRAWN BY:	CMB	APPRDVED BY:			
LAST EDIT:	03/08/04	PLOT DATE:	03/08/04		
DATE	BY	REV#	REVISION	CK'D	APPR.

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PORT OF ST.HELENS
SCAPPOOSE INDUSTRIAL AIRPARK

NOISE CONTOURS
EXHIBIT 4A

SCAPPOOSE OREGON

SCALE:	PROJECT NO.	DRAWING FILE NAME:	SHEET
1"=2000'	30398	EXHIBIT-4a	4A

Office: SEATTLE | System: WHP-SEA-8RCY121 | User: CBONTEMPO

02MP13-4B-9/2/04

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 and 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
Government 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 and 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

The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

See other side for notes and key to table.

PORT OF ST. HELENS

Exhibit 4B
LAND USE COMPATIBILITY GUIDELINES

02MP13-4B-9/2/04

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.
25, 30, 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

NOTES

1 Where the community determines that residential or school uses must be allowed, measures to achieve 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. 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 a NLR of 25.

7 Residential buildings require a NLR of 30.

8 Residential buildings not permitted.

Source: ***F.A.R. Part 150***, Appendix A, Table 1.

PORT OF ST. HELENS

Exhibit 4B (Continued)
LAND USE COMPATIBILITY GUIDELINES

Exhibit 4C
Scappoose Industrial Airpark--Master Plan Update
Proposed Capital Improvement Projects (April 2004)

	Project Description	Total Cost	Funding Source: Port	State*	FAA*	Private
Stage I (2004-2008)						
2004	Property Acquisition (east side - 60 acres)	$ 920,000	$ 46,000	$ 0	$ 874,000	$ 0
	Security Fencing	$ 193,000	$ 9,650	$ 0	$ 183,350	$ 0
	FBO Development Area	$ 232,200	$ 0	$ 0	$ 0	$ 232,200
	FBO Apron	$ 80,900	$ 0	$ 0	$ 0	$ 80,900
	FBO Hangar Construction (9000 SF)	$ 435,500	$ 0	$ 0	$ 0	$ 435,500
	Hangar Construction (northwest side; 1 building - 16 units)	$ 773,680	$ 773,680	$ 0	$ 0	$ 0
	Avigation Easement Acquisition	$ 37,500	$ 1,875	$ 0	$ 35,625	$ 0
	Subtotal 2004	$ 2,672,780	$ 831,205	$ 0	$ 1,092,975	$ 748,600
2005	Taxilane Construction (west side)	$ 151,700	$ 7,585	$ 0	$ 144,115	$ 0
	Oregon Aero Hangar Expansion	$ 3,000,000	$ 0	$ 0	$ 0	$ 3,000,000
	Obstruction Survey and Removal	$ 11,800	$ 590	$ 0	$ 11,210	$ 0
	Building Demolition (northeast side - 4 buildings)	$ 83,400	$ 4,170	$ 0	$ 79,230	$ 0
	General Airfield Pavement Maintenance (per PCI)	$ 320,000	$ 80,000	$ 240,000	$ 0	$ 0
	Entrance Roadway	$ 200,000	$ 10,000	$ 0	$ 190,000	$ 0
	Subtotal 2005	$ 3,766,900	$ 102,345	$ 240,000	$ 424,555	$ 3,000,000
2006	Taxiway Lighting (east side)	$ 372,900	$ 18,645	$ 0	$ 354,255	$ 0
	Sherpa Aircraft Hangar Expansion	$ 1,330,000	$ 0	$ 0	$ 0	$ 1,330,000
	Taxiway/Taxilane Construction (east side)	$ 378,500	$ 18,925	$ 0	$ 359,575	$ 0
	Industrial Business Park Roadway Package (CIDA)**	$ 900,000	$ 450,000	$ 0	$ 0	$ 450,000
	CIDA Sewer Extension**	$ 545,000	$ 272,500	$ 0	$ 0	$ 272,500
	Hangar Construction (west side; 1 building - 8 units)	$ 387,100	$ 387,100	$ 0	$ 0	$ 0
	Subtotal 2006	$ 3,913,500	$ 1,147,170	$ 0	$ 713,830	$ 2,052,500
2007	Hangar Construction (east side; 1 building - 10 units)	$ 459,800	$ 459,800	$ 0	$ 0	$ 0
	Security Fencing (Area 21)	$ 190,400	$ 9,520	$ 0	$ 180,880	$ 0
	Industrial Business Park Building Package (CIDA)**	$ 780,000	$ 0	$ 0	$ 0	$ 780,000
	Subtotal 2007	$ 1,430,200	$ 469,320	$ 0	$ 180,880	$ 780,000
2008	General Airfield Pavement Maintenance (per PCI)	$ 250,000	$ 62,500	$ 187,500	$ 0	$ 0
	Subtotal 2008	$ 250,000	$ 62,500	$ 187,500	$ 0	$ 0
	Subtotal Stage I	**$ 12,033,380**	**$ 2,612,540**	**$ 427,500**	**$ 2,412,240**	**$ 6,581,100**
Stage II (2009-2013)						
	Property Acquisition (west side - 30.4 acres)	$ 659,100	$ 65,910	$ 0	$ 593,190	$ 0
	Building Demolition (Farm Buildings)	$ 16,500	$ 1,650	$ 0	$ 14,850	$ 0
	Industrial Business Park Building Package (CIDA)**	$ 780,000	$ 0	$ 0	$ 0	$ 780,000
	Hangar Construction (east side; 1 buildings - 10 units)	$ 459,800	$ 459,800	$ 0	$ 0	$ 0
	Access Roadway and Utility Construction (Skyway Drive Extension)	$ 915,920	$ 915,920	$ 0	$ 0	$ 0
	Taxilane Construction (east side)	$ 354,400	$ 35,440	$ 0	$ 318,960	$ 0
	Executive Hangar Construction (east side; 2 buildings-8,000 SF each)	$ 227,700	$ 0	$ 0	$ 0	$ 227,700
	Parallel Taxiway and Segmented Circle Relocation	$ 615,300	$ 61,530	$ 0	$ 553,770	$ 0
	Taxiway Lighting (west side)	$ 364,200	$ 36,420	$ 0	$ 327,780	$ 0
	Runway 33 REILs	$ 21,700	$ 2,170	$ 0	$ 19,530	$ 0
	General Airfield Pavement Maintenance	$ 500,000	$ 125,000	$ 375,000	$ 0	$ 0
	ALP Update	$ 50,000	$ 5,000	$ 0	$ 45,000	$ 0
	Subtotal Stage II	**$ 4,964,620**	**$ 1,708,840**	**$ 375,000**	**$ 1,873,080**	**$ 1,007,700**
Stage III (2014-2023)						
	Access Roadway and Utility Construction (east side)	$ 1,866,400	$ 0	$ 0	$ 0	$ 1,866,400
	Auto Parking Construction (east side)	$ 181,540	$ 181,540	$ 0	$ 0	$ 0
	Apron and Taxilane Construction (east side)	$ 1,584,100	$ 158,410	$ 0	$ 1,425,690	$ 0
	Hangar Construction (east side; 8 buildings-80 units)	$ 4,615,100	$ 4,615,100	$ 0	$ 0	$ 0
	Conventional & FBO Hangar Construction (east side; 3 buildings-15,000 SF ea)	$ 4,315,500	$ 4,315,500	$ 0	$ 0	$ 0
	Industrial Business Park Building Package (CIDA)**	$ 780,000	$ 0	$ 0	$ 0	$ 780,000
	Runway Lighting Upgrade to LED	$ 365,600	$ 36,560	$ 0	$ 329,040	$ 0
	General Airfield Pavement Maintenance	$ 500,000	$ 125,000	$ 375,000	$ 0	$ 0
	Master Plan Update	$ 150,000	$ 15,000	$ 0	$ 135,000	$ 0
	Subtotal Stage III	**$ 14,358,240**	**$ 9,447,110**	**$ 375,000**	**$ 1,889,730**	**$ 2,646,400**
	Cumulative Total =	**$ 31,356,240**	**$ 13,768,490**	**$ 1,177,500**	**$ 6,175,050**	**$ 10,235,200**

* ELIGIBILITY FOR FAA OR STATE FUNDING DOES NOT INSURE THAT FUNDS WILL BE AVAILABLE OR GRANTED FOR THE PROJECT.
** COSTS OBTAINED FROM CIDA MASTER PLAN FOR SCAPPOOSE AIRPARK INDUSTRIAL BUSINESS PARK.
- ALL COST ESTIMATES ARE IN 2003 DOLLARS.
- TOTAL COSTS INCLUDE CONSTRUCTION, TEMPORARY FLAGGING AND SIGNING, CONSTRUCTION STAKING, TESTING, ENGINEERING, ADMINISTRATION, AND CONTINGENCY, AS APPLICABLE.
- DETENTION AND WATER QUALITY COSTS ARE INCLUDED FOR NEW IMPERVIOUS SURFACES PER COLUMBIA COUNTYREQUIREMENTS.
- SEPTIC COSTS INCLUDED FOR ALL NEW HANGAR DEVELOPMENTS.

FILE NAME: I:/PROJECT/PORTOFSTHELENS/30398/OFFICE/EXCEL/ScappooseMPCIP.XLS

PORT OF
ST. HELENS

Attachment A

FUNDING & AIRPORT REVENUE ANALYSIS

FUNDING OF THE DEVELOPMENT PROGRAM

The development program outlined in the previous table will not exclusively rely upon the Port of St. Helens for funding. In fact, most public airport development projects are dependent on other sources for at least a portion of capital improvement funding. In virtually all cases, the primary source for airport development funds is the aviation user.

It must be recognized that long range feasibility analyses must be based on many assumptions. In practice, projects will be undertaken when demand actually warrants, rather than in accordance with a proposed schedule developed 20 years or more in advance. Further, the actual financing of capital expenditures will be a function of airport circumstances at the time of project implementation. As a result, the assumptions and analyses prepared here must be viewed in the context of their primary purpose: to examine whether there is a reasonable expectation that recommended improvements will be financially feasible and implementable.

FEDERAL GRANTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for the purpose of national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The current program is the Airport Improvement Program (AIP). AIP has been reauthorized several times since its initial enactment in 1982. For this analysis, it is assumed that a similar federal program will continue throughout the planning period, as has been the case since the 1940s.

The source for AIP funds is the Aviation Trust Fund. The Trust Fund is the depository for all federal aviation taxes such as those on airline tickets, aviation fuel, lubricants, tires and tubes, aircraft registrations, and other aviation-related fees. The funds are distributed under appropriations set by Congress to all airports in the United States which have certified eligibility. The distribution of grants is administered by the Federal Aviation Administration (FAA).

In Oregon, general aviation airport development projects that meet FAA's eligibility requirements can receive funding from AIP. Property acquisition and airfield, terminal, aprons, and access road improvements are examples of items eligible for funding. At this time proposed Federal Legislature could make hangar and fueling facilities eligible for AIP funding.

A primary feature of AIP funding which must be recognized and properly considered is that these funds are distributed on a priority basis. These priorities are established by

each FAA regional office based upon the number and dollar amount of assistance applications. The program provides 75 to 95 percent funding for eligible projects at airports around the country.

The primary feature of AIP discretionary funds is that these funds are distributed on a priority basis. These priorities are established by each FAA regional office based upon the number and dollar amount of applications received. Since the program offers 95 percent or more funding for eligible projects at smaller airports, it is essential to most public airport development programs. The AIP recently expanded its eligibility to fund T-Hangars and fueling facilities. This will greatly enhance the financial viability of all GA airports. As a result, Scappoose Industrial Airpark will be competing with other airports in Oregon and the FAA Northwest Mountain Region for discretionary funds.

If the funding is not forthcoming in the form of AIP grants, then projects will either be delayed or require funding from other sources. Therefore, the Port of St. Helens should work with the FAA to solicit funding for priority projects.

STATE FUNDING

In support of the state airport system, the state of Oregon also participates in airport improvement projects through the Financial Aid to Municipalities (FAM). Presently, the maximum yearly state contribution is $10,000.

The state of Oregon also recognizes the importance of pavement maintenance by inspecting system airports on a three-year rotating basis. Once identified as a pavement maintenance-eligible item, the state participates with the airport sponsor on a percentage basis to perform pavement surface improvements. The percent of sponsor participation for a Category 2 general aviation airport (the designation for Scappoose Industrial Airpark) is 10 percent.

LOCAL FINANCING

The capital improvement program table summarizes the eligibility of the airport development for state and federal funds. After consideration is given to available grants, the remaining costs of airport development are the responsibility of the airport sponsor. For major airport development projects, this will typically require financing in the form of a bond program. Ideally, a financing package is established and net airport operating income is utilized to retire the debt service. The following section will analyze the program based upon a reasonable rates-and-charges schedule.

AIRPORT REVENUE ANALYSIS

Operating revenues generated at Scappoose Industrial Airpark can generally be categorized into one of the following two primary sources:

- Activity-Related Fees
- Airport Leases

The contribution of each of these primary revenue sources to total operating revenue at the airport will be examined in the following sections. Current rates and leasing policies will also be examined and compared to national averages, selective airports in the western U.S. as well as 3 airports in Oregon and Southwest Washington that are comparable to Scappoose. Prior to completion of the Final Master Plan, a revenue and expense analysis will be presented based on the final Airport Capitol Improvement Program as approved by the Port Commission.

ACTIVITY-RELATED FEES

Activity-related fees are revenues generated through the use of airport facilities and/or services. These fees are generally considered as revenues that are collected by the Port from individuals or businesses for short-term use of Port-owned and managed facilities. Activity-related fees at Scappoose Industrial Airpark have been established by the Port of St. Helens as follows:

- Open Hangar Building $60.00
- East Side Ten Unit Hangar Building $100.00
- East Side Five Unit Hangar Building $113.00
- West Side Interior Hangars $127.00
- West Side End Hangars $150.00
- Building (W-9) -- West Side Interior Hangar $150.00
  End Hangar..... $170.00
- Newest Building (W-10) -- West Side Interior $165.00
  End Hangar..... $185.00
- Tie-Down Fee $21.00
- Land Lease..... $0.015/sq.ft./month
  $0.18/sq.ft./year

The activity-related revenues (exclusive of the land leases) were estimated at approximately $189,476 for FY 2002/2003. This represented 51 percent of total Industrial Airpark revenues.

AIRPORT LEASES

Other airport revenues are generated through long-term leases of buildings and land on the airport. In general, these leases range from one to 30 years. Many are adjusted annually based upon the current consumer price index (cpi). Extended leases can allow individuals or private businesses to amortize their investments over the term of the lease. Current leases on the airport are summarized below (adjustments may have taken place since the leases were originally collected by the consultant for this analysis):

- Sherpa Aircraft Manufacturing .....$4,145/month/cpi adj.
- Oregon Aero Inc. .....$3,476/month/cpi adj.
- Composites Unlimited .....$2,750/month/cpi adj.
- Sportcopter Inc.....$2,514/month/cpi adj.
- TransWestern Aviation $303/month
- Northwest Antique Airplane Club...$50/month/adjust to $75-100
- Schrock/Bell-land lease .....$100/month/cpi adj.
- Ernie Happala-pasture lease $575/year
- Rosanne Jones/Frank Beran-residential $1,050/month
- Keven/Tracie Feakin-residential $495/month
- Aaron Lee-land lease $100/month

In addition to the above-listed leases, the Port also derives revenue from West Lane and Airport Road rentals and National Weather Service. Combined, the airport leases provided approximately $182,512 in revenue for FY 2002/2003. This represented 49 percent of Industrial Airpark revenues.

Lease rates on the airport may vary by tenant based upon the condition of the facility being leased, the activities conducted on the site, and other factors. No gross receipts are received by the Port from tenants and no fuel flowage fees are currently being collected.

RATES AND CHARGES COMPARISON

The objective of the rates and charges comparison is to examine existing revenue sources and to compare them against comparable sources from other airports and national averages. While activity-related fees and leasing rates vary by airport, there are common practices that generally promote maximized revenue generation. Furthermore, by comparing market conditions and the rates charged for airport services at Scappoose Industrial Airpark to average rates or other comparable airports, potential rate adjustments may be identified for the airport.

National surveys are conducted annually by the American Association of Airport Executives (AAAE) to identify current rates and charges at airports choosing to participate in the survey. Responding airports are categorized by type and size so that national averages can be identified for airports based upon their general size. The most recent surveys received a response from nearly 350 airports, with nearly two-thirds in the category of commercial service airports.

While specific rates and charges vary by airport based upon local market conditions, common practices used to develop the rates tend to make them somewhat comparable region to region. For this reason, local rates and charges were compared against five other comparable airports located in the western United States, but outside of major metropolitan areas. In addition, Port Staff conducted site visits and surveys of McMinnville and Corvallis, Oregon and Pearson, Washington Airports. Rates and changes were also compared with these local facilities. (see detail results in Appendix).

Land leases often use a market-based approach to determine lease rates where leased areas and the rates charged for those areas are determined by location on the airport. For example, a plot of land having excellent airfield access, located proximate to the airport's FBO, and having excellent landside access would be leased at a rate higher than other locations. Annual adjustments to land lease rates, as well as many other charges, are typically based on annual changes to the consumer price index. When hangars and buildings are financed by the airport sponsor, tenants are charged a rate that is based on ground lease rates in addition to a building rental rate. In some cases, hangar development may be financed privately with the airport sponsor implementing a land lease for the life of amortization on the building, with reversion of the building to the airport sponsor following the amortization period. These represent standard practices within the airport management industry.

The average rates and charges from the AAAE survey, specific rates identified for the five comparable airports in the western US are summarized as follows: (These five airports are Bakersfield and Calexico, California, Flagstaff, Lake Havasu, and Prescott, Arizona.)

Improved Ground Rental Rates

• AAAE National Average	$0.23/sq.ft./year
• Western U.S.	
Airport B	$0.24/sq.ft./year
Airport C	$0.30/sq.ft./year
Airport F	$0.15-0.25/sq.ft./year
Airport L	$0.27/sq.ft./year
Airport P	$0.22/sq.ft./year

- Local Airports

McMinnville	Not Obtained
Pearson	Not Obtained
Corvallis	$0.19/sq.ft/year

- Scappoose Industrial Park — $0.18/sq.ft./year

T-Hangar Rental Rates

- AAAE National Average — $165/month

- Western U.S.

Airport B	$250/month
Airport C	$226/month
Airport F	$230/month
Airport L	$340/month
Airport P	$177/month

- Local Airports

McMinnville	$225/month
Pearson	$252-374/month
Corvallis	$136/month

- Scappoose Industrial Park — $127-185/month

Fuel Flowage Fees

- AAAE National Average — $0.07/gallon

- Western U.S.

Airport B	$0.06/gallon
Airport C	None
Airport F	$0.07/gallon
Airport L	$0.08/gallon
Airport P	None

- Local Airports

McMinnville	$0.03-0.05/gallon
Pearson	$0.05/gallon
Corvallis	$0.06/gallon

- Scappoose Industrial Park — None

* Information from Oregon Department of Aviation Summary November 2002

Tie Down Rates

- AAAE/Western U.S. Average- A national average and detailed information from the 5 airports studied were not given in survey- a sampling indicated a wide range of rates that varied from $10-72/month.

- Local Airports

McMinnville	$25/month
Pearson	$37/month
Corvallis	$23/month

- Scappoose Industrial Park $21/month

Scappoose Industrial Airpark compares favorably to other airports in ground rentals, T-hangar rentals, and Tie Down rates, although the older hangar rentals are falling below the national average. The Port of St. Helens would realize significant revenue enhancement with the collection of a fuel flowage fee.

Based on the local airport survey the Port staff recommended rate increases to the Port Commission on July 24th, 2003. A 10% rate increase on the West 1-8 hangars and tie down fees was approved and went into affect on September 1st, 2003. The additional annual revenue generated for these new rates in over $13,000.

OTHER FINANCIAL OPPORTUNITIES

Promoting new development on the airport property will improve the airport's financial opportunities. The master plan study identifies specific infrastructure development projects that will allow the airport to better serve its users, including the Industrial Business Park and the availability of parcels for executive and corporate hangar development. In addition to the projects identified in the master plan study, the Port of St. Helens should continue to promote additional tenant development on the airport property. Although it is difficult to identify in specific detail the type of development that may arise at the airport, there are general categories of development that should be considered.

AVIATION DEVELOPMENT

Aviation development represents a two-fold means for improving an airport's operating income: direct lease rates or user fees, and revenue generated through increased activity on the airfield (fuel sales and/or gross receipts). Aviation development opportunities for Scappoose Industrial Airpark include the development of additional T-hangars, executive hangars, and conventional hangars.

The majority of existing hangars on the airfield are owned by the Port of St. Helens and rented to aircraft owners at various rates depending on the size and age of the structure. All available hangar units at the airport are currently leased and the airport maintains a hangar waiting list of aircraft owners wishing to locate on the airfield. It appears that there is sufficient demand to justify the construction of additional hangars.

New hangars will likely generate additional activity; therefore, the Port should pursue development of the hangars as soon as property can be readied for development. The Port should take maximum opportunity of federal, state, or local economic development funding in facility development, even though federal participation is limited to infrastructure and taxiway development.

NON-AVIATION DEVELOPMENT

Where aviation development opportunities do not exist, non-aviation development may represent a means for generating additional revenues. A good example is the proposed development of the Industrial Business Park, on a parcel which has limited access to the airfield. Many non-aviation uses that develop on airport property are airport related, but do not necessarily need to be located on airport property. They do so, based upon the availability of sites, convenience, and other market considerations.

As much as practical, the non-aviation properties which develop on airport property should be developed in ways that enhance the air operations and support those functions that are directly dependent upon airport services. The Port of St. Helens should give priority consideration to firms that are aviation-oriented. However, this should not preclude using their available sites to attract companies in the competition for economic development. Creating strong business activities near the airport will create beneficial effects and a favorable climate for the potential attraction of aviation-related companies.

SUMMARY

As an essential element of the local, regional, and national transportation system, Scappoose Industrial Airpark functions as an economic catalyst for the local area. As such, it should be developed to reflect the functional needs of the airport in the future, while also designating the areas which are available to enhance the local economic benefit of the airport. Airport master planning efforts have attempted to maximize existing and future property in an efficient manner, while serving projected demands throughout the planning period. These goals can only be obtained if the Port continues to maximize revenue potential through its rates and charges and utilizes the federal airport improvement program (AIP) on all eligible projects, as identified in the airport

capital improvement program (ACIP). In summary, the planning process requires that the Port of St. Helens continually monitor the need for new or rehabilitated facilities, since applications for federally eligible projects must be submitted with the FAA each year. The short-term program included in the ACIP will need to be updated each year to reflect the highest priority projects under consideration for funding.

Cash Flow Analysis
Scappoose Industrial Airpark

	2004	2018	2019	2020	2021	2022	2023
Revenues							
Industrial Airpark Revenues(A)	$904,932	$968,791	$1,409,855	$1,452,150	$1,495,715	$1,540,586	$1,586,804
(Existing Facilities/Leases-adj.3%/yr. for CPI)							
Industrial Airpark Revenues(B)	$0	$176,123	$181,407	$222,104	$228,767	$254,331	$261,961
(Future T-Hangars/adj. 3%/yr.)		10 units		20 units		10 units	
Total Industrial Airpark Revenues	$904,932	$944,914	$1,591,262	$1,674,254	$1,724,482	$1,794,917	$1,848,764
Expenses							
Materials/Services/Capital	$280,070	$344,978	$350,152	$355,405	$360,736	$366,147	$371,639
(Adjusted 1.5%/yr.)							
Utilities-City of Scappoose	$76,092	$100,402	$102,410	$104,458	$106,547	$108,678	$110,852
(Adjusted 2.0%/yr.)							
Administration	$43,896	$66,397	$68,389	$70,440	$72,553	$74,730	$76,972
(Adjusted 3.0%/yr.)							
Existing Debt Service							
92 Bond Debt	$81,960	$					
95A Bond Debt	$71,928	$					
96A Bond Debt	$18,216	$					
99 Bond Debt	$32,160	$32,160					
OEDD 173 (2002)	$18,984	$18,984	$18,984	$18,984	$18,984		
Future Debt Service							
05 Bond Debt (6%)		$67,449	$67,449	$67,449	$67,449	$67,449	$67,449
07 Bond Debt (6%)		32,213	$32,213	$32,213	$32,213	$32,213	$32,213
08 Bond Debt (6%)		47,295	$47,295	$47,295	$47,295	$47,295	$47,295
10 Bond Debt (6%)		47,295	$47,295	$47,295	$47,295	$47,295	$47,295
12 Bond Debt (6%)		47,295	$47,295	$47,295	$47,295	$47,295	$47,295
14 Bond Debt (6%)		47,295	$47,295	$47,295	$47,295	$47,295	$47,295
16 Bond Debt (6%)		96,397	$96,397	$96,397	$96,397	$96,397	$96,397
18 Bond Debt (6%)		47,295	$47,295	$47,295	$47,295	$47,295	$47,295
20 Bond Debt (6%)				$96,397	$96,397	$96,397	$96,397
22 Bond Debt (6%)						$47,295	$47,295
Total Industrial Airpark Expenses	$623,306	$695,456	$972,470	$1,078,219	$1,087,753	$1,125,783	$1,135,690
Net Income/Loss	$281,626	$249,459	$618,791	$596,035	$636,729	$669,134	$713,074
Total Capital Improvement Projects	$2,672,780	$3,735,730	$1,435,730	$1,435,730	$1,435,730	$1,435,730	$1,435,730
AIP Eligible Projects (+)	$1,150,500	$428,030	$228,030	$228,030	$228,030	$228,030	$228,030
Non-AIP Eligible Projects (+)	$1,522,280	$3,307,700	$1,207,700	$1,207,700	$1,207,700	$1,207,700	$1,207,700
Federal Grants (-)	$1,092,975	$205,227	$205,227	$205,227	$205,227	$205,227	$205,227
State Grants (-)	$0	$37,500	$37,500	$37,500	$37,500	$37,500	$37,500
Private/Bond Financing (-)	$1,522,280	$3,026,150	$726,150	$726,150	$726,150	$726,150	$726,150
Local (Port) Share	$57,525	$466,853	$466,853	$466,853	$466,853	$466,853	$466,853
Net Cash Flow	$224,101	$182,606	$151,938	$129,182	$169,876	$202,281	$246,221

rev. 4/19/04

July 24, 2003

TO: Port of St. Helens Commission

FROM: Kim Shade

RE: Hangar Rate Increase Recommendation

History

The last hangar rate increase became effective September 1, 2001. The hangar rates were adjusted 7% to reflect the Consumer Price Index (CPI) for a two year period. T-hangar W-9 rates were not increased because of a clause calling for current rates to remain in effect until August 2005.

Rates were increased 6%, July 1, 1999, to reflect CPI for a two year period. T-hangar W-9 rates were not increased because of a clause calling for current rates to remain in effect until August 2005.

Rates were increased 6%, July 1, 1997, to reflect CPI for a two year period.

I did not find any record of hangar rate increases prior to 1997. It is my understanding, when the Port acquired the airport they consciously set the hangar rates low to attract business. SIA's rates have remained under market since. We now have 19 people on the waiting list for interior hangars and 4 on the list for end hangars.

Hangar W-9 rates are locked until 2005 and W-10 rates are locked until 2007.

The Scappoose Industrial Airpark Advisory Board will discuss this recommendation for a rate increase at their board meeting, July 28th.

Staff visited comparable airports and attached is a monthly rate comparison. Corvallis's hangars rates are low. Corvallis does not have a demand for hangars because there are several airports near them who have more desirable private hangars.

Staff Recommendation

- **10% hangar rate increase for T-hangars on the east side and W-1 through W-8, effective September 1, 2003.**
- **This will bring our rates closer to comparable market rates and help decrease the airport's annual cash loss.**

The projected increase is included in the 2003-2004 budget.

Thank You!

SCAPPOOSE INDUSTRIAL AIRPARK
EXISTING AND PROPOSED 10% HANGAR RATE INCREASE

Hangar Type	Current Rate Effective 9/1/01	Total Current Monthly Rents	10% Increase Rounded	New Rate Effective 9/1/03	Total New Monthly Anticipated
Interior W-1 through W-8 (64)	$127.00	$8,128.00	$13.00	$140.00	$8,960.00
End W-1 through W-8 (16)	$150.00	$2,400.00	$15.00	$165.00	$2,640.00
Interior W-9 (8)	$150.00	$1,200.00	0	$150.00	$1,200.00
End W-9 (2)	$170.00	$340.00	0	$170.00	$340.00
Interior W-10 (8)	$165.00*	$1,320.00	0	$165.00	$1,320.00
End W-10 (2)	$185.00*	$370.00	0	$185.00	$370.00
Tie Downs (adv. 9)	$21.00	$189.00	$2.00	$23.00	$207.00
MONTHLY TOTALS		$13,947.00			$15,037.00

ADDITIONAL ANNUAL REVENUE GENERATED
BASED ON 10% RATE INCREASE: $13,080.00

July 15, 2003

SCAPPOOSE INDUSTRIAL AIRPARK
EXISTING AND PROPOSED RATE INCREASE
BASED ON ADVERAGE OF McMINVILLE, PEARSON AND CORVALLIS

Moorage Type	Current Rate Effective 9/1/01	Total Current Monthly Rents	New Rate Effective 7/1/03	Total New Monthly Anticipated
Interior W-1 through W-8 (64)	$127.00	$8,128.00	$204.00	$13,056.00
End W-1 through W-8 (16)	$150.00	$2,400.00	$245.00	$3,920.00
Interior W-9 (8)	$150.00	$1,200.00	$150.00	$1,200.00
End W-9 (2)	$170.00	$340.00	$170.00	$340.00
Interior W-10 (8)	$165.00*	$1,320.00	$165.00	$1,320.00
End W-10 (2)	$185.00*	$370.00	$185.00	$370.00
Tie Downs (adv. 9)	$21.00	$189.00	$28.00	$189.00
MONTHLY TOTALS		$13,947.00		$20,395.00

ADDITIONAL ANNUAL REVENUE GENERATED
BASED ON ADVERAGE - RATE INCREASE: $77,376.00

April 24, 2001

SCAPPOOSE INDUSTRIAL AIRPARK
EXISTING AND PROPOSED HANGAR RATE INCREASE
BASED ON W-10 RATES

Moorage Type	Current Rate Effective 9/1/01	Total Current Monthly Rents	Increase Rounded	New Rate Effective 7/1/03	Total New Monthly Anticipated
Interior W-1 through W-8 (64)	$127.00	$8,128.00	$38.00	$165.00	$10,560.00
End W-1 through W-8 (16)	$150.00	$2,400.00	$35.00	$185.00	$2,960.00
Interior W-9 (8)	$150.00	$1,200.00	0	$150.00	$1,200.00
End W-9 (2)	$170.00	$340.00	0	$170.00	$340.00
Interior W-10 (8)	$165.00*	$1,320.00	0	$165.00	$1,320.00
End W-10 (2)	$185.00*	$370.00	0	$185.00	$370.00
Tie Downs (adv. 9)	$21.00	$189.00	$1.00	$22.00	$198.00
MONTHLY TOTALS		$13,947.00			$16,948.00

ADDITIONAL ANNUAL REVENUE GENERATED
BASED ON W-10 RATES: $36,012.00

April 24, 2001

SCAPPOOSE INDUSTRIAL AIRPARK
T-HANGAR MONTHLY RATE COMPARISON
April 2003

Hangar	Current Rate Effective 9/1/01	McMinnville	Pearson	Corvallis	Average of McMin. Pearson & Corvallis
Interior W-1 through W-8	$127.00	$225.00	$252.00	$136.00	$204.00
End W-1 through W-8	$150.00	$225.00	$374.00	$136.00	$245.00
Interior W-9	$150.00*	$225.00	$252.00	$136.00	$204.00
End W-9	$170.00*	$225.00	$374.00	$136.00	$245.00
Interior W-10	$165.00*	$225.00	$252.00	$136.00	$204.00
End W-10	$185.00*	$225.00	$374.00	$136.00	$245.00
Tie Downs	$21.00	$25.00	$37.00	$23.00	$28.00
Comments	120 hangars 40- Tie downs 22 on waiting list $50 waiting list dep	90 hangars 32 City owned 21- Tie downs 40 on waiting list No waiting list dep.	150 hangars 128 City owned 14 Tie downs 17 on waiting list $50.00 waiting list dep.	102 hangars 54 are City owned 46-Tie downs vacancies No waiting list dep.	

*W-9 hangar rate locked until 2005 and W-10 hangar rates locked until 2007.

PORT OF
ST. HELENS

Attachment B

AIRPORT COMPLIANCE

AIRPORT COMPLIANCE ISSUES

The FAA recommends that airport sponsors periodically review compliance issues with Grant Assurances made with their last FAA Grant. Issues related to compliance at Scappoose Industrial Airpark include through-the-fence access to the airfield and rates and charges. The following narrative discusses current FAA policy on through-the-fence access. Rates and charges will be added when the preliminary airport capital improvement program is developed.

THROUGH-THE-FENCE AIRPORT ACCESS

There are instances when the owner of a public airport proposed to enter into an agreement which permits access to the public landing area by aircraft based on land adjacent to, but not part of, the airport property. This type of an arrangement is commonly called a through-the-fence operation, whether the perimeter fence is imaginary or real. It is Federal Aviation Administration (FAA) policy to discourage through-the-fence agreements.

The obligation to make an airport available for the use and benefit of the public does <u>not</u> impose any requirement to permit access by aircraft from adjacent property. On the contrary, the existence of such an arrangement has been recognized as an encumbrance upon the airport property itself. Airport obligations arising from federal grant agreements and conveyance instruments apply to dedicated airport land and facilities and not to private property adjacent to the airport, even when the property owner is granted a through-the-fence privilege.

The owner of a public airport is entitled to seek recovery of the initial and continuing costs of providing a public use landing area. The owners of airports receiving federal funds have been required to establish a fee and rental structure designed to make the airports as self-sustaining as possible. Most public airports seek to recover a substantial part of airfield operating costs indirectly through various arrangements affecting commercial activities <u>on</u> the airport. The development of aeronautical businesses on land uncontrolled by the airport owner may give the through-the-fence operation a competitive advantage that will be detrimental to the on-airport operators on whom the airport owner relies for revenue and service to the public. To avoid a potential imbalance, the airport owner <u>may refuse</u> to authorize a through-the-fence operation. In an effort to equalize an imbalance of existing through-the-fence operations, the airport owner should obtain a fair return from off-airport operators in exchange for continuing access to the airport and use of the landing area.

Although airports do not need and should avoid through-the-fence arrangements, circumstances may arise which compel an airport owner to contemplate a through-the-fence operation. In this situation, the airport owner must plan ahead to

formulate a prudent through-the-fence agreement and obtain just compensation for granting access to the airport because the airport is enfranchising a special class of airport users who will be permitted to exercise an exclusive through-the-fence privilege.

In making airport facilities available for public use, the airport owner must make the airport as self-sustaining as possible under the particular circumstances at the airport. The FAA has interpreted the self-sustaining assurance to require airport owners to charge fair market value (FMV) commercial rates for nonaeronautical uses of the airport. In conformity with the self-sustaining principle, it would be appropriate to charge FMV rates to off-airport users for the exclusive privilege of accessing the airport through-the-fence. In formulating a through-the-fence agreement, the airport owner should endeavor to establish terms that are beneficial to the airport. For example, the adjacent developer or landowner should be made to finance the necessary improvements and maintenance of the facilities and infrastructure connecting the adjacent land to the airport's landing area. Recurring payments should be based on use rather than on flat rates. Agreements should contain provisions allowing the airport to terminate through-the-fence access permits for cause.

In addition, the airport owner must restrict the uses that may be made of the adjacent land as a condition for granting a through-the-fence privilege. Private property owners must be asked to enter into agreements that prohibit public aeronautical commercial operations. Simply stated, they should not be allowed to operate as fixed base operators (FBO) offering aeronautical services to the public. Such FBO operations, if allowed, would give private property operators an advantage over on-airport operators. Allowing private property owners to gain a competitive advantage will jeopardize the economic vitality of the airport and impede its ability to remain self-sustaining. Additionally, any economic advantage gained by adjacent property owners will diminish the economic viability of the airport's own aeronautical commercial operators.

Arrangements that permit aircraft to gain access to a public landing area from off-site property introduce safety considerations along with additional hazards that complicate the control of vehicular and aircraft traffic. Airport improvements designed to accommodate access to the airport and landing areas from an off-site location for the sole benefit and convenience of an off-airport neighbor present a substantial and continuing burden to the airport owner. In addition, the airport must contend with legal, insurance, and management implications represented by increased costs, liability, and administrative and operational controls. For the airport owner, it may become an unexpected challenge to balance airport needs with the increasing demands on the airport by off-airport users.

It is FAA policy to strongly discourage any agreement that grants access to public landing areas by aircraft normally stored on adjacent property. Airport owners

must guard against any through-the-fence operation that can become detrimental to the airport and threaten its economic viability. Any agreement for a through-the-fence operation must include provisions making such operations subject to the same federal obligations as tenants on airport property. Furthermore, the airport owner must ensure that the through-the-fence operators contribute a fair share toward the cost of the operation, maintenance, and improvement of the airport and that they do not gain an unfair economic advantage over on-airport operators.

PORT OF
ST. HELENS

Attachment C

FAA COMMENTS

U.S. Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S. W., Ste 250
Renton, Washington 98055-4056

January 14, 2003

Mr. Paul Langner
Marine Industrial Manager
Port of St. Helens
P. O. Box 598
St. Helens, Oregon 97051

Dear Mr. Langner:

Airport Master Plan Update
Scappoose Industrial Airpark, Scappoose, Oregon
FAA Review Comments on Working Paper Two
AIP Project No. 3-41-0056-12

I have reviewed the Aviation Demand Forecasts working paper submitted by the consultants for the Airport Master Plan Update for Scappoose Industrial Airpark (SPB). The report is well-done, and the study project appears to be off to a good start. My only specific review comments at this time are as follows:

1. It would be helpful to have the Inventory chapter completed in draft form at the outset of the study's review process. The background information in that chapter would provide the reader with an informative basis for evaluating subsequent working papers and would outline the framework for the remainder of the study.

2. Page 2-12, para. 3 – How did the consultants arrive at the preferred forecast? The only explanation is that it "falls in between" other forecasts. If it was some form of averaging, say so. If not, then explain.

3. Exhibit 2C – The "preferred" forecasts of based aircraft (Table 2H) and aircraft operations (Table 2K), respectively, are hereby approved and accepted for Federal Aviation Administration (FAA) purposes.

I hope to be able to attend one or more future meetings of the Planning Advisory Committee (PAC) during the course of this study project. Please call me at (425) 227-2652 if I can be of further assistance.

Sincerely,

Don M. Larson
Airport Planner

cc:
Rainse Anderson, W&H Pacific

Mesic, Lorelei

From: Don.Larson@faa.gov
Sent: Wednesday, November 12, 2003 10:32 AM
To: langner@portsh.org
Cc: williamson@portsh.org; Anderson, Rainse; Mesic, Lorelei; stevewagner@coffmanassociates.com; Bill.Watson@faa.gov
Subject: Scappoose Industrial Park

Scappoose 2003 ALP Review Comm..

Paul,
Bill Watson noticed that the proposed industrial park as depicted on the draft ALP would be on land the updated Exhibit 'A' shows was acquired with grant funds for airport development. I had not picked up on that in my review and comments letter of 10/27. He told me that he had informed you that non-aeronautical development on such grant land is not allowed. We do want the Port to retain the property in question. There are a couple of options for this: (1) Show the area on the ALP for future aeronautical development, i.e., additional hangars, FBO, etc.; or (2) Keep the proposed industrial park as depicted on the draft ALP by transferring the grant obligation to future land acquisition. This latter approach could be accomplished by appraising the existing property at current fair market value at such time as the Port is ready to purchase AIP-eligible property on the other side of the airport. The appraised value of the existing property to be used for industrial development would then be deducted from the Federal share of the new land being acquired. Non-aeronautical development on the existing property could not commence until AFTER the new land has been acquired for planned airport development. If you have any questions, let me know.
Don

----- Forwarded by Don Larson/ANM/FAA on 11/12/2003 10:13 AM -----

Don Larson
10/27/2003 10:45 AM

To: langner@portsh.org
cc: williamson@portsh.org, reanderson@whpacific.com, lmesic@whpacific.com, stevewagner@coffmanassociates.com
Subject: Scappoose ALP

(See attached file: Scappoose 2003 ALP Review Comments.doc)

U.S. Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S. W., Ste 250
Renton, Washington 98055-4056

October 27, 2003

Mr. Paul Langner
Marine Industrial Manager
Port of St. Helens
P. O. Box 598
St. Helens, Oregon 97051

Dear Mr. Langner:

Draft Airport Layout Plan (ALP) Review Comments
Scappoose Industrial Airpark
AIP Project No. 3-41-0056-12

I have reviewed the draft ALP set of drawings for Scappoose Industrial Airpark. My preliminary review comments are enclosed and, upon receipt of the final list of projects (revised Exhibit 4C) for the 20-year planning period, will be forwarded to other Federal Aviation Administration (FAA) divisions reviewing the ALP and conducting an aeronautical study on the proposed improvements. These comments are provided at this time as a convenience to the consultants and to expedite revisions to the drawings.

The plans should not be finalized for submittal until the aeronautical study has been completed, as additional revisions may be necessary. I will forward final comments upon completion of the aeronautical study. Please call me at (425) 227-2652 if I can be of further assistance.

Sincerely,

Don M. Larson
Airport Planner

1 Enclosure

cc:
Rainse Anderson, W&H Pacific

SEA641:DMLARSON:dml:10/27/03:X2652:FILE: Scappoose:Mc

FAA REVIEW COMMENTS
DRAFT AIRPORT LAYOUT PLAN (ALP) SET
SCAPPOOSE INDUSTRIAL AIRPARK

Sheet 1 – TITLE SHEET

1. The month of submittal for final approval (which will probably be January, 2004) should be used.

Sheet 2 – AIRPORT LAYOUT PLAN

2. Show the location of the airport rotating beacon (and include in the Legend and Runway Data table: visual approach aids).

3. Show the localizer array and equipment shelter.

4. Runway end identification lights (REIL's) are shown on the drawing but not in the Legend.

5. Automobile parking should be planned adjacent to the future hangar areas.

6. It is unclear from the drawing whether the proposed Industrial Business Park would include taxilane access west of the existing Sky Way Drive, particularly as a portion of that street is planned to be closed at designated locations for taxiing aircraft ("taxiing" is misspelled). Only one gate is shown (half-toned, should be bold) south of that location. Also, a future road appears to connect to the parallel taxiway. In order to prevent airfield incursions by unauthorized vehicles, at-grade connections between public roads and taxilanes or other aircraft movement areas must not be permitted.

7. In general, there is too much linework clutter on the drawing. For example, the numbered facility circles could be smaller, and it is not necessary to show a line connecting to every T-hangar building in a complex (or even to any).

Sheet 5 – RUNWAY 15/33 PROTECTION ZONE PLAN & PROFILES

8. See comment nos. 5 and 6.

ALL OTHER DRAWINGS

9. Revisions must be made where appropriate for consistency with the above comments. Please make needed corrections and/or provide information from available sources to the extent specified in the approved scope of work.

Mesic, Lorelei

From: Anderson, Rainse
Sent: Monday, November 24, 2003 12:26 PM
To: 'Don.Larson@faa.gov'
Cc: Paul Langner; Mesic, Lorelei; stevewagner@coffmanassociates.com; williamson@portsh.org
Subject: RE: Scappoose Industrial Park

Don,

Thanks for the direction. We'll figure things out on this end.

Rainse

-----Original Message-----
From: Don.Larson@faa.gov [mailto:Don.Larson@faa.gov]
Sent: Friday, November 21, 2003 3:21 PM
To: Anderson, Rainse
Cc: Bill.Watson@faa.gov; Paul Langner; Mesic, Lorelei; stevewagner@coffmanassociates.com; williamson@portsh.org
Subject: RE: Scappoose Industrial Park

Areas 9 & 11 are bisected with lines on the Exhibit 'A' (submitted by the Port in 1997), but there is no explanation or information other than that Area 9 was funded by ADAP-02 and Area 11 was funded by AIP-01. If there is additional information to show that grant land was only a part of those parcels, the Port needs to provide documentation to that effect (we don't keep detailed records that far back, just summaries).

"Anderson, Rainse" <ReAnderson@whpacific.com>, Don Larson/ANM/FAA@FAA
11/21/2003 01:13 PM

To: "Paul Langner" <langner@portsh.org>,
cc: <williamson@portsh.org>, "Mesic, Lorelei" <LMesic@whpacific.com>, <stevewagner@coffmanassociates.com>, Bill Watson/ANM/FAA@FAA
Subject: RE: Scappoose Industrial Park

Don,

We've been discussing this issue with the Port and Pete Williamson recalls that the FAA participated in the purchase of the eastern sections and the Port only purchased the western section of parcels 9 and 11. We are checking the Port records but aren't finding a clear picture. Could you please check the FAA archives regarding AIP-01 to help us resolve this issue?

Thank you

Rainse

-----Original Message-----
From: Paul Langner [mailto:langner@portsh.org]
Sent: Wednesday, November 12, 2003 10:58 AM
To: Don.Larson@faa.gov
Cc: williamson@portsh.org; Anderson, Rainse; Mesic, Lorelei;
stevewagner@coffmanassociates.com; Bill.Watson@faa.gov
Subject: Re: Scappoose Industrial Park

Understand.

We will be discussing this internally and hope have a clear direction (if possible) following the internal debate on what should happen at the airport.

Thank you and thank Bill Watson for bringing this up now.

I would sure hate to be surprised later.

Paul

Don.Larson@faa.gov wrote:

> Paul,
> Bill Watson noticed that the proposed industrial park as depicted on the
> draft ALP would be on land the updated Exhibit 'A' shows was acquired with
> grant funds for airport development. I had not picked up on that in my
> review and comments letter of 10/27. He told me that he had informed you
> that non-aeronautical development on such grant land is not allowed. We do
> want the Port to retain the property in question. There are a couple of
> options for this: (1) Show the area on the ALP for future aeronautical
> development, i.e., additional hangars, FBO, etc.; or (2) Keep the proposed
> industrial park as depicted on the draft ALP by transferring the grant
> obligation to future land acquisition. This latter approach could be
> accomplished by appraising the existing property at current fair market
> value at such time as the Port is ready to purchase AIP-eligible property
> on the other side of the airport. The appraised value of the existing
> property to be used for industrial development would then be deducted from
> the Federal share of the new land being acquired. Non-aeronautical
> development on the existing property could not commence until AFTER the new
> land has been acquired for planned airport development. If you have any
> questions, let me know.
> Don
>
> ----- Forwarded by Don Larson/ANM/FAA on 11/12/2003 10:13 AM -----
>
> Don Larson
> To: langner@portsh.org
> 10/27/2003 10:45 AM cc: williamson@portsh.org, reanderson@whpacific.com, lmesic@whpacific.com, stevewagner@coffmanassociates.com
> Subject: Scappoose ALP

>
>
> (See attached file: Scappoose 2003 ALP Review Comments.doc)
>
>

> Name: Scappoose 2003 ALP Review Comments.doc
> Scappoose 2003 ALP Review Comments.doc Type: WINWORD File (application/msword)
> Encoding: base64

U.S. Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S. W., Ste 250
Renton, Washington 98055-4056

May 12, 2004

Mr. Paul Langner
Marine Industrial Manager
Port of St. Helens
P. O. Box 598
St. Helens, Oregon 97051

Dear Mr. Langner:

2nd Draft Airport Layout Plan (ALP) Review Comments
Scappoose Industrial Airpark
AIP Project No. 3-41-0056-12

I have reviewed the revised 2nd draft ALP set of drawings for Scappoose Industrial Airpark (SPB). My preliminary review comments are noted below and have been forwarded to other Federal Aviation Administration (FAA) divisions reviewing the ALP and conducting an aeronautical study on the proposed improvements. These comments are provided at this time as a convenience to the consultants and to expedite revisions to the drawings. The plans should not be finalized for submittal until the aeronautical study has been completed, as additional revisions may be necessary. I will forward final comments upon completion of the aeronautical study. I have also reviewed the revised Airport Plans working paper and financial documents for the Airport Master Plan Update report. My review comments are also noted below.

ALP Set

1. On the title sheet, the month of submittal for final approval (which will probably be July or August, 2004) should be used. Changed to August 2004.

2. The first set of drawings, submitted in October, 2003, included an updated Exhibit 'A' Property map. That drawing was not included with the latest set of plans. It should be included, and reflect consistency with the existing and future property lines and facilities on the updated ALP drawings. Has been updated and is included.

Report

3. On Exhibit 4C, pavement marking maintenance (2006 and 2007) is not eligible for Airport Improvement Program (AIP) funding, nor is auto parking (Stage III). Deleted from eligibility.

Please call me at (425) 227-2652 if I can be of further assistance.

Sincerely,

ORIGINAL SIGNED BY
DON M. LARSON

Don M. Larson
Airport Planner

cc:
Rainse Anderson, W&H Pacific

Mesic, Lorelei

From: Don.Larson@faa.gov
Sent: Wednesday, May 12, 2004 10:00 AM
To: langner@portsh.org
Cc: Anderson, Rainse; Mesic, Lorelei; stevewagner@coffmanassociates.com
Subject: Scappoose MP

Scappoose 2003
2nd ALP Review ...

(See attached file: Scappoose 2003 2nd ALP Review Comments.doc)

Don M. Larson
Airport Planner
FAA Seattle ADO
1601 Lind Ave. SW, #250
Renton, WA 98055
(425) 227-2652
Fax: 227-1650
don.larson@faa.gov

U.S. Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S. W., Ste 250
Renton, Washington 98055-4056

July 7, 2004

Mr. Paul Langner
Marine Industrial Manager
Port of St. Helens
P. O. Box 598
St. Helens, Oregon 97051

Dear Mr. Langner:

Airport Layout Plan (ALP) Final Review Comments
Scappoose Industrial Airpark
AIP Project No. 3-41-0056-12

The coordination for review within the Federal Aviation Administration (FAA) has been completed on the draft Airport Layout Plan set of drawings for the proposed improvements at Scappoose Industrial Airpark. Our review comments on the 2nd draft of the ALP set were sent to you on May 12, 2004.

Also, an aeronautical study (no. 2004-ANM-282-NRA) was conducted on the proposed development to determine its effect on the safe and efficient utilization of the navigable airspace by aircraft. There were no objections based on that evaluation, and no additional review comments arising from the coordination with the other FAA divisions.

The Master Plan report will be accepted upon receipt of two copies of the final document. The FAA will approve the ALP and drawings related to Federal Aviation Regulation (FAR) Part 77 once our comments are reflected on the final drawings, with proposed development subject to environmental approval, where applicable. Please send us 3 sets of prints, signed and dated, plus 1 set of mylars (unsigned), and the ALP CADD files on disk, when they are finalized. We will return one 1 approved set to you. We would like to complete this project and close out the grant as soon as possible. Please call me at (425) 227-2652 if I can be of further assistance.

Sincerely,

Don M. Larson
Airport Planner

cc:
Charles Riordan, Oregon Dept. of Aviation
Rainse Anderson, W&H Pacific

, Lorelei

Don.Larson@faa.gov
Wednesday, July 07, 2004 1:11 PM
langner@portsh.org
Mesic, Lorelei; stevewagner@coffmanassociates.com; Anderson, Rainse; williamson@portsh.org; Charles.H.Riordan@state.or.us
RE: Scappoose ALP

oose 2004
Comme...

ttached file: Scappoose 2004 ALP Final Comments.doc)

Forwarded by Don Larson/ANM/FAA on 07/07/2004 01:08 PM -----

"Anderson, Rainse" <ReAnderson@whpacific.com>
07/02/2004 11:25 AM

To: Don Larson/ANM/FAA@FAA, er@portsh.org>
cc: "Mesic, Lorelei" c@whpacific.com>, <stevewagner@coffmanassociates.com>, "Anderson, Rainse" uerson@whpacific.com>
Subject: RE: Scappoose MP

for your comments on the Scappoose Master plan. I wanted to check status of the remaining coordination reviews/comments. As your our review submittal was made in early May and our client would have the documents completed as soon as possible. Please let me hat the status is so we can schedule our final corrections and g.

egards,

E. Anderson, P.E.
n Services Director

riginal Message-----
on.Larson@faa.gov [mailto:Don.Larson@faa.gov]
Wednesday, May 12, 2004 10:00 AM
gner@portsh.org
arson, Rainse; Mesic, Lorelei; stevewagner@coffmanassociates.com
t: Scappoose MP

(See attached file: Scappoose 2003 2nd ALP Review Comments.doc)

Don M. Larson
Airport Planner
FAA Seattle ADO
1601 Lind Ave. SW, #250
Renton, WA 98055
(425) 227-2652
Fax: 227-1650
don.larson@faa.gov

----- Forwarded by Don Larson/ANM/FAA on 07/02/2004 12:55 PM -----

Don Larson
06/21/2004 08:22
AM

To: Kathy CTR Doudna/ANM/CNTR/FAA@FAA, Terry L Parnell/ANM/FAA@FAA, Carolyn Rice/ANM/FAA@FAA, Michael L Kelly/ANM/FAA@FAA

cc: Wade Bryant/ANM/FAA@FAA, Bill Watson/ANM/FAA@FAA, Bev Newkirk/ANM/FAA@FAA

Subject: 2004-ANM-282-NRA, Scappoose, OR, ALP

We are still waiting on ANM-230 and SEA-FPO comments only for 2004-ANM-282-NRA, updated ALP for Scappoose Industrial Airport (OR), coordinated on 5/12/04. Comments are needed ASAP in order that this grant project can be closed out. Please advise of your intended completion date. Thanks.

Don M. Larson
Airport Planner
FAA Seattle ADO
1601 Lind Ave. SW, #250
Renton, WA 98055
(425) 227-2652
Fax: 227-1650
don.larson@faa.gov