

Final Report of the Regional Air Transportation Demand Task Force

April 2000

**Institute of Portland Metropolitan Studies
Portland State University**

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April 14, 2000**

Charge...

The Port of Portland requested that the Institute of Portland Metropolitan Studies convene a Regional Air Transportation Demand Task Force to investigate two questions arising from the preparation of a new master plan for PDX:

- First, is the forecast underlying the master plan a reasonable depiction of future demand for passenger, cargo, military, and general aviation usage of the airport?
- Second, what other alternatives ought to be considered in addition to those looked at as part of the PDX master plan process?

Note that the charge was not to determine whether the Port Commission should or should not adopt the master plan. Acceptance or rejection of the improvements identified in the master plan will ultimately require the preparation of at least one and probably more environmental impact statements. Through the environmental impact statement process, proposed improvements are subjected to rigorous analysis commensurate with the scale of the impacts and the nature of the process used to identify them.

In contrast, this Task Force has been asked to provide a scan of possible alternatives to determine whether any warranted further review at this time. Actual analysis of alternatives would require funding and time commitments well in excess of those made to this initial process. Nonetheless, the Task Force has utilized its meetings to help clarify the questions that the Port Commission will have to address as it considers adopting the plan. At a minimum, the findings of the Task Force should be used as a starting point for broadening the Port's traditional approach to airport master planning at PDX.

Findings...

1) The forecast used for the master plan is reasonable, though like all forecasts, it should continue to be refined and improved in the future - As the region grows, and as personal income increases, there will continue to be increasing demand for air transportation services, both passenger and cargo, in the next several decades. The forecast used for the master plan projects a moderate but steady rate of increase in demand.

The forecast model for passenger activity is most sensitive to changes in personal income and the price of a ticket. For example, the Task Force was informed that altering assumptions about ticket price, specifically fuel cost, can swing demand in that model by as much as 12% if there is a 100% increase in fuel cost and 100% of that cost is passed on to consumers. Military usage is projected to be flat, though the future for military use depends on decisions to be made about the active duty air force. The military presence at PDX operates on a ground lease, which currently has 29 years remaining. Typically, federal investment in new facilities requires a 30-year term, necessitating renegotiation of the lease with the Port.

Cargo activity is projected to increase significantly. During the course of the Task Force's deliberations, a new cargo facility linked to increases in e-commerce activity was announced for PDX. The facility is located in the path of the proposed third runway, but the terms of the ground lease provide for the Port to be able to buy out the interest of the owner 21 years from now, about the time increased capacity is currently projected to be needed. Nonetheless, the dynamic nature of air cargo, particularly as both businesses and households move to "just in time" patterns of activity, suggests that although air cargo is forecasted to increase significantly, increases could even be larger than are currently forecast.

In the case of passenger and cargo activity, increases in activity reflect increases in population in the region. In that all forecasts for the region project increasing population and increasing personal income, a master plan forecast for steady increases in demand over the next 20 years is consistent with other forecasts currently in use.

2) Timing is not determined by forecasts - The exact timing of the need for new improvements is hard to pin down. The forecast is a tool for planning, not a set schedule for construction of improvements. The forecast incorporates a "high to low" range which underscores the huge variability in outcomes that can reasonably be expected.

The Port has made it clear that new capacity won't be built in advance of a clear demonstration of need. Demonstration of need would mean growth in service demand consistent with the forecast, or changes in demand and/or activity that bring the terminal and runways closer to the theoretical limits of its existing capacity.

That demonstration of need could occur sooner, consistent with, or later than when the forecast predicts. Even if need is demonstrated, and even if the master plan improvements survive a thorough environmental impact review, the requirement for air carrier funding of the terminal means that major new investments at PDX will require both significant growth in activity at PDX and agreement by air carriers that improvements are financially viable from their point of view. Consequently, actual decision making regarding the timing and extent of future investment will be informed by the forecast, but won't be determined by the forecast alone.

3) Forces in motion now could accelerate or postpone the need for new capacity - A number of factors considered by the Task Force could have significant impacts on the timing of implementation of the master plan or any other alternative. Increasing costs of air travel, stemming from higher fuel or other operational costs, would likely dampen demand. Population growth east of the Cascades and in southern Oregon could lead to increased service and a decrease in the "leakage" of passengers from those markets to PDX. The retirement of the baby boom and the overall aging of the population could effect when and why people fly.

New technologies for air traffic control could lead to more efficient and greater utilization of existing facilities. New and larger aircraft, and higher load factors, could move more people with fewer flights, or could simply expand the range of existing airlines and increase the number of markets served with direct flights. Some have suggested that the next generation of aircraft could be tilt rotors, which for some applications might not rely on conventional airports.

Changes in air cargo accompanying the e-commerce "revolution," as noted above, could mean many more flights in and out of PDX by both small (box hauler) and larger cargo

aircraft. More telecommuting and video conferencing might decrease the need for some business travel, or have no effect at all. Finally, as noted above, changes in the mission for the military could lead to both increased or decreased activity. All of these forces are in motion now, and their cumulative impact will become clear only over time.

4) There is a window of opportunity for creating greater flexibility for future decision makers - Using the current forecast, the Port does not expect to even begin work on environmental impact statements for 8 - 12 years. There will be one and possibly two more master plans prior to engaging in preliminary steps for developing the third runway and decentralized terminal option identified in the master plan currently pending before the Port Commission. Consequently, the Port should act now to take steps to both increase the time available for studying alternatives to the path identified in the master plan, and for avoiding premature commitments to existing technology and market forces.

5) PDX is not an island, either in the Pacific Northwest or globally - PDX is part of a system of runways serving Oregon and the Pacific Northwest. However, it hasn't been planned that way. In fact, PDX is a competitor with SEATAC, and essentially a "hub" for the rest of Oregon. Due to the fact that changes in air transportation demand are driven significantly by changes in the global economy, and population growth in other metropolitan areas in the state, future planning for PDX needs to occur in the context of relationships between PDX and airports and transportation agencies in the metropolitan area, the Willamette Valley, and the rest of the region. Developing the relationships in the Pacific Northwest to make that possible is a step that remains to be taken.

6) Demand management and "least cost alternatives" should be explored as means for extending the "life" of current airport capacity - The Task Force also spent considerable time discussing strategies which, if pursued as part of a comprehensive strategy, could effect the marginal rate of increase and therefore the timing of the need for future improvements. In particular, the Task Force discussed further analysis of:

- rail alternatives to meet the demand for trips between Portland and Seattle, now accounting for about 7% of passenger loadings and 17% - 18% of operations at PDX, and possibly other regional trips in the Pacific Northwest;
- moving some operations, particularly associated with military, general aviation, and cargo, to other airports;
- using "landing slots" or gate management techniques to shift demand to off-peak periods and/or to promote better utilization of facilities during peak periods; and
- employing pricing or other demand management strategies to shift some peak period operations to other times of day or even off PDX altogether.

The Task Force was informed that any demand management approaches could require changes in Federal law or administrative rules, and would be highly controversial and difficult to implement within the current federal/regulatory framework.

There is little field experience with "demand management" and "least cost alternatives," but these means for extending the "life" of current airport capacity should be explored. The Task Force saw a leadership role for the Port in pursuing further evaluation of demand management alternatives, including initiating that discussion at the federal level. The Task Force also discussed the role that the Port could play in critically reviewing operator and FAA demands for increased capacity, and in playing a leadership role for initiating discussion of demand management issues with other airport operators.

7) Noise, other environmental impacts, and transportation system impacts need to be part of the discussion - The Task Force heard from the public regarding the noise and traffic impacts of increased activity at PDX. The trade-offs between concentrating impacts at one facility

or spreading them among several are not clear. Flight tracks already effect much of the region, and there is no guarantee that moving flights away from PDX won't continue to impact currently effected neighborhoods.

The Task Force was informed that the current capacity of PDX and levels of activity anticipated in the master plan can theoretically be handled by the region's road system if planned road and transit improvements are made. However, there has been no analysis of what improvements might be needed to serve the volume of activity possible following completion of master plan improvements, or even if it is possible to increase the capacity of the surface transportation system to serve the airport.

Interestingly, though congestion of the air transportation system is not contemplated under the master plan, local road congestion is simply assumed to be something that consumers and shippers will plan around. The Port has acknowledged the need for further noise, airspace, air quality, wetland, water quality, and transportation analysis of impacts associated with the proposed master plan.

The master plan also raises an additional and related issue. The Portland-Vancouver metropolitan area has adopted growth management plans, on both the Oregon and Washington sides of the Columbia River, that call for maintaining quality of life in existing communities and limiting the outward expansion of the urban area. These goals will only be met through a careful and ongoing balancing process involving a wide range of participants. Into the middle of all of this comes the present and future impact of operations at PDX on community quality of life.

To some, operations are already making their communities unlivable, creating a force for the outward expansion of the urban area rather than the effective use of close-in communities for accommodating growth. Ultimately, the Port Commission and other decision-makers in the region must consider how much impact at PDX is acceptable and consistent with area growth management plans. That explicit consideration of the impact of greater operations at PDX in the context of regional growth management and local comprehensive plans has yet to take place.

With today's aviation technology and community patterns of activity, it is difficult to build an airport with no noise or traffic impacts, though appropriate land use planning at an early stage can be an important means for mitigating negative impacts. Simply put, there is no "over there" where the impacts can be assigned and where no community is effected by airport related noise or traffic congestion.

Viewed in this light, the master plan satisfies likely air transportation needs in the future, but does so with little to offer in the way of relief for impacted communities. This reiterates the value of the window of opportunity for the Port noted above. If commitments to master plan improvements do not need to be made today, then keeping as many doors open as possible, for as long as possible, holds out the best hope for meeting demand in the future with the least impact.

8) A New Airport either north or south of PDX should not be a high priority for study now, and faces considerable challenges in the future - A new airport to replace PDX would require approximately 10,000 acres. PDX currently occupies slightly more than

3000 acres, a size based not on current and future needs and impacts, but on historic decisions based on the best available information at the time. The current conflicts between PDX and its surroundings, and projected future needs calls for a land base greater than that currently available. Given the cost of a new facility, very roughly estimated to be in excess of five billion dollars, building in obsolescence through the provision of an inadequate land base at a new location makes little sense.

However, whether the size of a new facility is 3000 acres or 10,000 acres or anything in between, it will clearly need to be located outside of any existing urban growth boundary or urban growth area on either side of the Columbia. Developing a new airport on rural land, though not impossible, would be highly controversial and would require major changes in state and local land use policy and expectations.

Note that current approaches to rural land use policy can work to keep the opportunity for a new airport open for the indefinite future, by preserving large contiguous blocks of land. However, the Port should not expect to seek a site for a new airport at this point in time as a response to future air transportation demand. Given the expense and the regional role that a major new facility should play, developing new functional relationships with facilities in both Oregon and the Puget Sound region should precede serious efforts at siting a new airport.

9) True high speed rail is not a short-term option, but more frequent rail service is - Developing truly high speed rail, on dedicated right-of-way and speeds in excess of 125 mph, does not appear to be a high priority for Oregon, Washington, or the nation. Nonetheless, though high-speed rail service in the Pacific Northwest, like a new airport, might emerge as a long-term, 50+ year option, increasing the speed, reliability, and frequency of service on existing right-of-ways in the Northwest can play an important role. The Task Force heard testimony that suggested that better intercity rail service can emerge as a competitive, financially viable means for meeting the mobility needs within the I-5 corridor.

10) Other airports in Oregon can offer some relief at PDX, but are unlikely to emerge as significant substitutes - The Port of Portland operates three other airports: Hillsboro, Troutdale, and Mulino. All three are general aviation airports that do not currently support commercial service. Troutdale is simply too close to PDX. Increased activity there would pose conflicts with airspace it shares with PDX. Mulino is a very small facility and functions more as a reliever for general aviation activity already displaced from PDX.

Hillsboro could potentially accommodate commercial passenger service and cargo activity. The facilities there could be improved to handle small regional air carrier passenger equipment, but would require major investment to handle larger planes. The Task Force reviewed material that suggests that airlines would be unlikely to provide significant service in Hillsboro due to the relatively small total population of the region, and the inability to make connecting flights with carriers at PDX. Both transportation and community land use conflicts make expansion at Hillsboro problematic, but not impossible. The Task Force was presented with information that suggests that even with significant new investment at Hillsboro, it would only relieve PDX of a small percentage of total operations.

Similarly, the Salem, McMinnville, Aurora, and Scappoose airports currently do not offer commercial service but provide important links for cargo and business aircraft. Salem, Aurora, Scappoose, and McMinnville in particular are too close to PDX to develop their own markets given their current populations. Nonetheless, development opportunities at these airports should be preserved to maintain their potential use as relievers.

The Medford, Corvallis, Eugene, and Redmond airports do offer commercial service. The Task Force was presented with information that suggests significant “leakage” of market from Eugene to Portland. However, until markets in Eugene and other parts of the state grow considerably, or until airline practices change, the likelihood of commercial service increases is slight. Further, greater service at Eugene, Redmond, or other airports in Oregon and Washington could actually generate more flights to and from PDX if that new regional service emerges as attractive competition for either driving or regional rail.

11) The military needs a metropolitan area location - Both the Oregon Air National Guard and the Air force Reserves depend on the metropolitan area for experienced personnel and for recruiting. In addition, the national defense role for the Guard requires a location in the metropolitan area. The total percentage of all operations at PDX contributed by military units is small, but may change in the future. The renegotiation of the lease with the Guard and discussions of possible relocation of military facilities at PDX should keep in mind that the metropolitan area, but not necessarily PDX, is the territory within which the military needs to locate. The military estimates that a relocation of their 245 acre, 60 building campus within PDX would cost \$310 million not including costs associated with land acquisition and environmental reviews and mitigation.

12) The public appreciates the Port’s support of the Task Force - On several occasions, both at meetings of the Task Force and in the news media, appreciation has been expressed for simply the provision of a public point of contact with the airport planning and decision making process. Concerned members of the public, including members of the Citizens Noise Advisory Committee itself, value the opportunity that the Task Force is providing for information dissemination, comment, and discussion. There appears to be a need for something like the Task Force, if not the Port Commission itself, to provide regular opportunities for public comment through other than administrative processes. As our region grows, the issues associated with meeting air transportation demand in the future are likely to become more, not less, complex and controversial. Consequently, the Port should act now to broaden the discussion of airport issues and challenges.

Recommendations...

To some members of the Task Force, the findings above and the lack of significant, likely alternatives suggests that the question isn’t if the improvements called for in the master plan will be needed in the future, but when. To others, the decision before the Port Commission has less to do with endorsing the master plan than with engaging in a broad effort to keep options open as long as possible to take advantage of new technologies, knowledge, and trends. In either case, the Port Commission has the option of adopting the master plan and making it the lead effort for airport planning in the next five to ten years, or adopting the master plan as part of a broader effort with parallel strands of activity. The exact nature of the Commission’s action on the master plan should appropriately be made clear by the Commission itself in the months ahead.

In light of the upcoming Commission action on the master plan for PDX, the Task Force recommends that the Port Commission:

1) Direct Port staff to engage in an ongoing airport planning and management process with four types of activities:

- **Quality of Life/Environmental Quality Initiatives** - Both through the master

plan and through other ongoing activities at the Port and in the community, a number of planning efforts and studies should immediately focus on quality of life/environmental quality issues associated with PDX. To date, the following studies and initiatives will be pursued:

- Part 150 noise study update
- thorough, ongoing monitoring of noise produced by box haulers and other aircraft weighing less than 75,000 pounds
- air quality study
- airport access study
- airport access improvements funding study
- water quality study

• **Regional System Initiatives** - The best available information suggests that there is a window of opportunity between now and 2010 to develop additional information about what could ultimately become components of a comprehensive response to air transportation demand in the region and the Pacific Northwest. The Port should analyze and pursue, where feasible, at least the following initiatives:

- greater coordination with SEATAC and the State of Washington to both manage and plan for meeting demand, including the assignment of specific roles to different facilities
- high speed rail planning in the I-5 corridor
- joining with Oregon Department of Aviation and other communities in the state to better articulate the role for PDX as part of a statewide (if not Pacific Northwest-wide) system of runways and terminals, and to promote needed land use studies to protect the ability of facilities in that system to play important roles in the future
- updating air space capacity studies at other nearby airports in the region

• **Keep Options Open** - Find ways to push out the dates at which the Port must make commitments to major capital projects at PDX for a third runway and additional terminal capacity. Maximizing the existing capacity at PDX will occur not through any single initiative, but through a combination of efforts each of which can yield a small percentage of the total operations or passenger count at the airport. These initiatives could include:

- improved passenger rail initiatives in the I-5 corridor
- discussions with the military regarding other metropolitan area locations
- investigation of cargo handling options at other airports in the metropolitan area
- demand management and terminal use strategies to more efficiently utilize existing runway and terminal capacity
- investigating technological changes that could enhance capacity without construction of new runways or terminals
- monitoring and engaging FAA policy processes regarding regulation of airline schedules and airspace utilization

• **Master Plan Improvement Studies** - If the future unfolds based on what we project or calculate today, if no other solutions to meeting demand are found, and if meeting demand is still regarded as an important part of maintaining the vitality of the region, then the master plan improvements will likely be moved forward around 2010. However, the current master planning process has identified a number of

issues that should immediately be addressed by ongoing PDX planning efforts. They include:

- renewing the airport conditional use permit or developing an airport zone
- updating the PDX airspace capacity study
- conducting additional financial/fiscal analysis for proposed master plan improvements
- engaging the military in siting discussions for their activities
- conducting and acting on land use compatibility studies for areas around PDX, Hillsboro, Troutdale, and other nearby airports

2) Play a leadership role in developing new relationships between planning and management of PDX and other local, state, and federal processes. Particularly for the regional system initiatives outlined above, the Port should be proactive in developing the relationships needed to best serve the Portland region and the rest of the Pacific Northwest. The Port is poised to actively represent the broad range of community interests in federal level discussions regarding demand management, financing, and air transportation policy generally.

The Port is already engaged in rail freight discussions, and it wouldn't be difficult to expand its involvement to include passenger rail issues as well. Critical decisions regarding surface transportation planning and financing are facing both Oregon and Washington, and the Port could and should be recognized as a leader in helping to resolve those issues, particularly as they effect the airport. Finally, issues of noise and environmental impact face every airport in the nation. The Port should become a leader innovator in proactively addressing these issues at PDX and its other facilities.

3) Maintain PDX as a viable facility. Whatever happens with the initiatives mentioned above, it is crucial for the Port to maintain the future viability of PDX. The Port should continue to acquire land, engage in improvements to existing facilities and transportation links, and preserve options for implementing the adopted master plan.

4) Develop a means for ongoing dialogue about and oversight for the implementation of these recommendations. Again, the Port has taken an important step in creating this Task Force and providing a public, accessible forum for the presentation and discussion of airport and air transportation issues. The Port Commission should charge either itself, another standing body, or a new entity to regularly revisit the progress being made to act on the recommendations of the Task Force, and to make those oversight activities open and accessible to those involved in the Task Force process and the public.

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