WHPacific

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MEMORANDUM

Date: 9/15/2009

RE: Pavement Evaluation

To: Gary Judd
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From: Peter Murphy
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Project#: 34266
Project Name: Bend Airport Taxiway B

Currently the runway at Bend Municipal Airport has a load rating of 30,000 pound single wheel load (SWL). Occasionally, heavier aircraft land on the runway and you wanted WHPacific to determine what kind of detrimental effect this would have on the existing runway pavement.

The Runway was constructed or improved in 2007 under AIP 13. From the Design Report compiled by David Evans and Associates, Inc., the runway was designed with the following pavement structure; 3" Asphalt, 6" Crushed Aggregate Base, and 13" of Aggregate Sub-base, for the 30,000 pound SWG. The asphalt and the Base are the load bearing component of the pavement structure. The sub-base is required for frost protection of the pavement structure and although not required for strength, the sub-base does add strength to the pavement structure.

The traffic at the airport is getting larger and heavier. A few of the larger aircraft using the airport are the G-IV (73,000 pounds dual wheeled gear (DWG)), the G-V (90,000 pounds DWG), and the Global Express (98,000 pounds DWG). Using Figure 3-3 from AC 150/5320-6D to determine the pavement thickness required, with a CBR value of 20, which was the CBR value used for the Taxiway B Project, and a gross aircraft weight of 100,000 pounds, with the number of annual departures at 1,200, the thickness of the pavement section must be at least 11.25". The pavement section of the runway is 9", which is a deficiency of 2.25". In addition, the FAA required minimum section thickness for the larger traffic is 4" of asphalt and 8" of crushed base rock.

It is my opinion, that in the short term (5 to 10 years) the pavement will be adequate to accommodate the increased load due to the larger aircraft. My reasoning for the opinion is twofold; 1. The airport is not handling 3-4 departures a day of the Global Express, and 2. the FAA chart does not take into the consideration the substantial aggregate sub-base, which creates a stronger pavement section.

Also, it is strongly recommended to program a project with a 2.5" asphalt overlay for the runway within the next 5 to 10 years to avoid severe irreparable damage to the pavement structure, which would require a more extensive and expensive project. The project may also

have to be programmed sooner, if the traffic of larger jets at the airport increases above 300 operations per year. The traffic and the runway pavement should be periodically monitored to identify any issues, should any arise.

Please let us know if there is anything else we can do for you concerning this issue or any other issue that may arise.

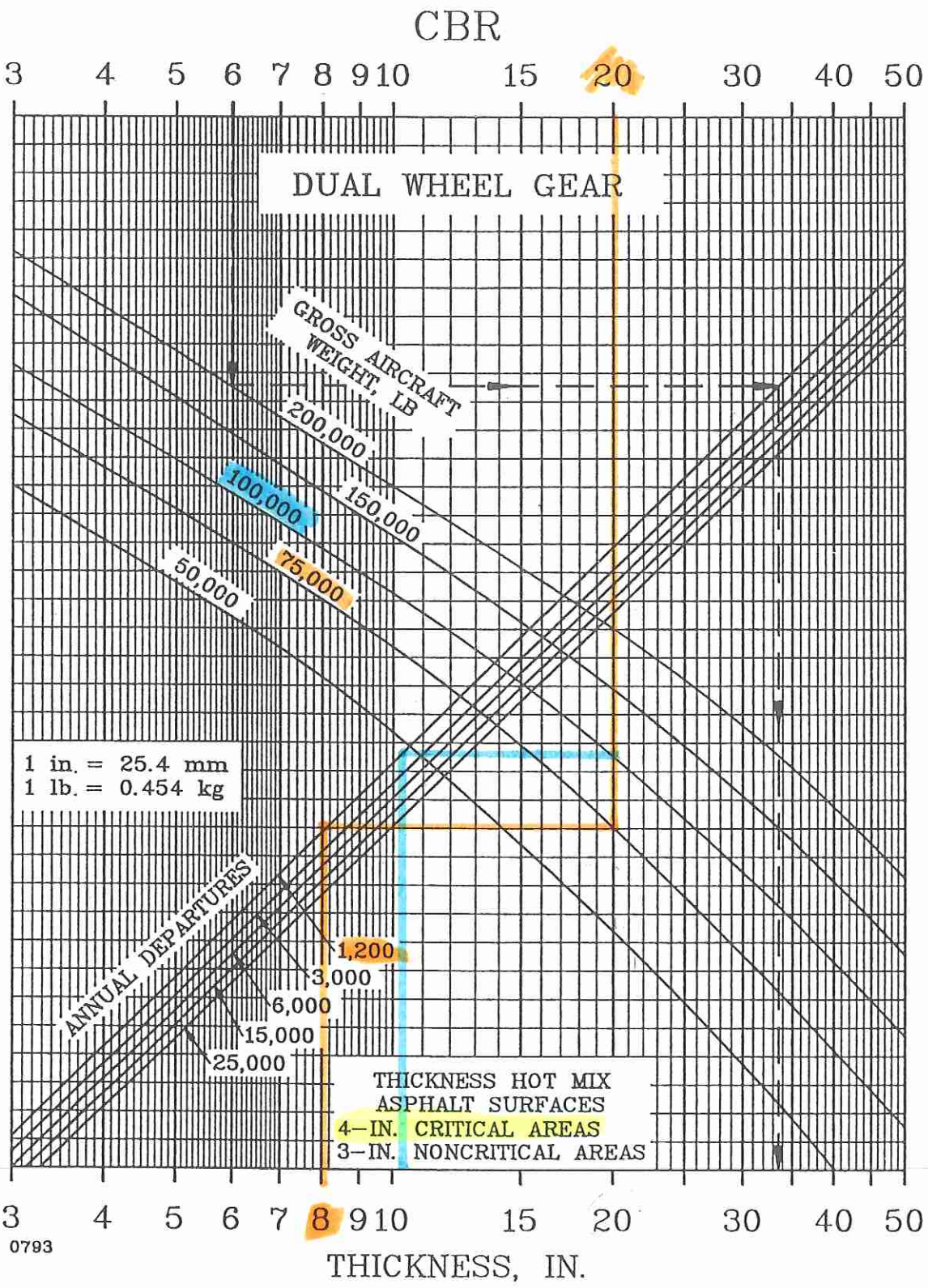

FIGURE 3-3 FLEXIBLE PAVEMENT DESIGN CURVES, DUAL WHEEL GEAR