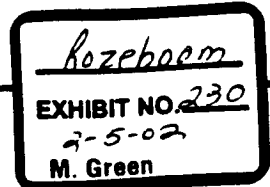


Eglick, Peter J.



From: BRozeboom@nhc-sea.com
Sent: Wednesday, February 16, 2000 4:22 PM
To: eglick@helsell.com
Cc: MLeytham@nhc-sea.com
Subject: Lagoon Expansion - Fitzpatrick email

Peter -

As requested, here are my initial thoughts for your follow-up to the email sent Jan 13, 2000 9:50 am from Kevin Fitzpatrick to Tom Luster.

There is some truth to what Fitzpatrick is saying. However, given the information available to us, we would take issue with some of the points made. Fitzpatrick implies that the major work being proposed is simply a water quality improvement and that any additional work to accommodate the future 3rd runway is incidental and minor. We would need to see the engineering studies behind the proposed expansion before accepting that explanation.

It seems to me that the major element of the work--which is the excavation needed to increase IWS system pond volume by 46 million gallons (or 141 acre-feet) above the current volume of 26 million gallons--is driven primarily by the need to accommodate proposed Master Plan Improvements which include the 3rd runway. Note that the ratio of increased volume to existing volume (46/26) is 1.77 and that the expansion will produce roughly a threefold increase in total available volume.

Table 4-1 on page 4-12 of the airport's 11/99 version of the Stormwater Management Plan provides data which are relevant to the proposed IWS storage expansion. According to Table 4-1, there are now (as of 1994) 272.5 acres of impervious surface at the airport being drained to the IWS system. Also according to Table 4-1, the impervious area being drained to the IWS system will increase by 521 acres during the 1994-2004 period for proposed Master Plan Improvements. The numbers in Table 4-1 do not add up, but that is a separate problem. Using the numbers cited above to define a worst-case scenario, the ratio of increased drainage area to the IWS relative to the existing IWS drainage area is (521/272.5) or 1.91 which represents roughly a threefold increase in total drainage to the IWS.

To recap, the work proposed for the IWS lagoon expansion is to provide about a threefold increase in the storage capacity associated with the IWS.

The SMP for the airport Master Plan Improvements indicates about a threefold increase in the total area to be drained to the IWS. Our conclusion from this is that the lagoon expansion project, or at least the magnitude of the excavation proposed, is driven by the Master Plan Improvements which include the 3rd runway.

One of our comments on the SMP was that there is an absence of detail on the proposed IWS system, and a lack of assessment on the implications of

the proposed out-of-basin water transfers. The SMP proposes to provide flow control in part by diverting undetermined (up to 521?) additional acres out of the natural aquifers and stream systems and into the IWS system. It is not clear in the SMP and EIS documents whether the implication of this diversion on aquifer recharge and stream base flows has been adequately assessed. Part of the problem is in having a clear understanding on how much diversion to the IWS is actually proposed. The hydrology assessment in FEIS Appendix G (pg G-43) includes some assessment of impacts to lost recharge based on additional impervious surface consisting of 94.2 acres in the Miller Creek basin and 153.1 acres in the Des Moines Creek basin. The groundwater study in FEIS Appendix Q (pg Q-A-15) states that approximately 97 acres of new impervious surface area would drain to Miller Creek, and approximately 95 acres of new impervious surface area would drain to Des Moines Creek. Review of the design documents for the IWS expansion would probably be helpful in confirming what basin areas are proposed for the IWS in the future. Impacts on aquifer recharge and stream base flows cannot be adequately assessed without a clear picture of what out-of-basin transfers via the IWS are being proposed.

Bill Rozeboom
northwest hydraulic consultants, inc
Ph (206) 241-6000
Fax (206) 439-2420