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May 26, 1977

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DEPT OF GEOLOGY
& MINERAL INDUS.

Mr. Jerry J. Gray
Department of Geology & Mineral Industries
3523 S. Pacific Blvd
P.O. Box 1028
Albany, Oregon 97321

Dear Mr. Gray:

We wish to thank you for the copy of the Ore Bin and the two excellent photographs of the Gordon H. Ball project and reclamation. We were indeed happy to receive them.

Also we wish to commend you for the fine article covering the history of the project and the reclamation. We were pleased with your coverage of the highlights. Presently the fields are productive and covered with a fine stand of wheat.

Respectfully yours,

Jack & Mary Chapin

Jack & Mary Chapin

- It was the only undeveloped land within miles of the plant.
- There were no complaining neighbors on Minto Island.
- The land was cheap.

Flood control impacts: The major disadvantage of the present site is that it flooded frequently. Given the lack of suitable alternate sites, however, the owners have been willing to put up with occasional flooding. Given the strong site advantages, it is probable that the basins would have been built even without reservoir flood control, though perhaps more restricted in size and with better floodproofing.

Gravel Pits

As Table ___ shows, the area taken up by sand and gravel extraction sites increased from nine acres in 1936 to a peak of 169 acres in 1956, and then declined to 139 acres in 1976. In addition to the three pits shown in Figure ___, there were also several pits in the area west of Keizer and another pit operated on the west bank across from Keizer. Closure of these latter pits resulted in acreage decrease after 1956.

Location factors: A combination of factors caused an increase in acres devoted to gravel extraction. Interviews with several pit operators and with State officials revealed these factors:

- These sites were near the market for sand and gravel. Length of haul is of overriding importance.
- The material was easily mined. This is a common advantage of flood plain sites.
- The land was inexpensive.
- Royalty payments to the State and laws designed to protect fish runs discouraged dredging directly from the river and mining of gravel bars directly adjacent to or in the river. Alternate dry land sites thus had to be found.
- One operator used to simply pick up gravel which had been dredged from the river by the Corps dredge. Operations on land had to be increased when the Corps stopped dredging.

- Last, and most important, demand for sand and gravel increased. State figures show that average annual extraction in Marion, Polk, and Yamhill Counties increased from 534,000 tons between 1940 and 1950 to 2,024,000 tons between 1970 and 1975.

Flood control impacts: Floods cause problems for gravel operations by damaging fixed washing and screening equipment, by contaminating and eroding material, by interrupting operations, and by requiring equipment evacuation. Reduction of flooding thus constitutes a reduction of the cost of operating a gravel extraction site. Salem gravel pit operators were aware of flood control effects and felt that they were helped somewhat by the reservoirs. In general, though, they did not see flood control as a primary reason for increased use of flood plain sites. They stressed that availability of material and distance to market are the overriding considerations in site selection. The trend in gravel pit acreage provides circumstantial evidence to support the gravel operators' view. As Table 1 shows, gravel pit acreage increased most sharply from 1936 to 1956. During most of this period flood control effects were minor. After 1956, when flood control effects were greatest, gravel pit acreage dropped off. The conclusion must be then that flood control has played only a minor role in the gravel pit acreage increase.

Overall Changes in the Salem Study Area

Figure ___ shows the trend in total acreage of intensive land uses in the Salem flood plain study area. Dates of first operation of the 11 Willamette Basin flood control reservoir are also shown. Upon initial inspection there seems to be a good correspondence between reservoir construction and intensified flood plain land use. As was mentioned above, though, significant flood control did not begin until Detroit Lake project began operating in 1953. Most interviewees felt protected mainly by Detroit and Green Peter projects.

TABLE 1

LAND USES IN THE SALEM STUDY AREA: 1936 - 1976

	Acres in 1936	Acres in 1944	Acres in 1956	Acres in 1967	Acres in 1972	Acres in 1976	Acreage Change: 1936- 1976	% Change: 1936- 1976
Urban & Rural Developed	271	313	970	1,377	1,498	1,661	+ 1,390	+ 513%
Urban Open Space	12	2	101	98	166	181	+ 169	NA
Large Industrial	0	21	53	155	129	166	+ 166	NA
Cropland & Orchard	4,414	4,843	4,676	3,978	3,835	3,388	- 1,026	- 23%
Golf Courses	85	81	119	305	356	351	+ 266	+ 313%
Gravel Pits	9	39	169	137	149	139	+ 130	NA
Woodland/Prairie	2,881	2,645	1,670	1,637	1,692	1,880	- 1,001	- 35%
Water	1,315	1,043	1,229	1,300	1,134	1,180	- 135	- 10%
Sanitary Landfill	0	0	0	0	28	41	+ 41	NA
TOTAL	8,987	8,987	8,987	8,987	8,987	8,987		

NA - indicates either that percentage was not calculable (i.e. $\frac{164}{0}$)

or that change was greater than 1,000%.

May 25, 1977
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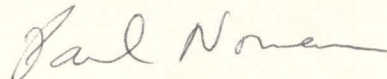
Jerry Gray
P.O. Box 1028
Albany, Oregon 97321

Dear Jerry:

As I promised, here are the pages in which I have cited the sand and gravel extraction figures- a non-controversial use of them, I think you will agree. This land use study is part of an EIS the Corps is doing on operation and maintenance of the Willamette Basin reservoirs.

Please call (221-6095) if you have any corrections or just comments, and thanks again for sending up the figures.

sincerely,



Paul Norman
Community Planner