

Appendix B

**Lower Duwamish Waterway
RM 4.3-4.9 East (Boeing Developmental Center)**

Historical Aerial Photograph Review

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In an effort to more thoroughly understand and evaluate historical facility operations and development in the RM 4.3-4.9 East (Boeing Developmental Center) source control area, SAIC reviewed historical aerial photographs from 1936 to 2004. At a minimum, these photographs represent conditions of roughly each decade. Additional photographs are available; however, if during a cursory assessment there were no apparent changes, photographs less than a decade apart were not included in this summary. The aerial photographs for the years 1936, 1946, 1956, 1960, 1969, 1977, 1980, 1990, 1999, and 2004 are described below.

1936

Slip 6 is already well defined and appears similar to the current size and shape although it is narrower at its entrance due to the presence of mudflats on the north side. There are logs floating in the slip adjacent to the lumber mill. No piers are in the slip at this time. The area immediately to the north of Slip 6 (Container Properties LLC) appears cleared but undeveloped.

The area south of Slip 6 was occupied by a lumber mill, as evidenced by the logs floating in the slip and what appear to be upwards of 100 stacks of milled lumber. One or two large buildings and possibly some smaller buildings comprised the lumber mill. The land immediately south of the lumber mill was cleared and vacant. To the northeast of the vacant land, adjacent to what is now Marginal Way and at the northern boundary of the Museum of Flight, were what appear to be four or five small structures and possibly a circular tank. Just south were two more buildings and some unidentified structures. These buildings were in the area approximately where Building 9-04 (the Museum of Flight) exists today and may have been the former location of Washington Compressed Gas or the American Winegrower's Association winery described in the RCRA assessment document (SAIC 1994). What appear to be four round tanks can be seen behind the buildings. Further to the south, a large building fronted Marginal Way where the current large parking lot north of S 96th Place is today. The purpose of this building is unknown.

To the south of S 96th Place were a collection of buildings and cleared land that may have been the stockyard and meat packing plant described in the RCRA assessment (SAIC 1994). Although no railroad tracks can be seen in the photo, there appears to be a line of railroad cars between the buildings and Marginal Way. The BDC RCRA assessment indicated that railroads once occupied part of the property, although the time period and location was not known. Further south of S 96th Place, at about where Building 9-110 and the eastern portion of Building 9-101 are today, was a large complex of buildings including at least one warehouse-sized structure. These buildings may have been associated with the stockyard and slaughterhouse as they appear to have been connected to the stockyard. A cluster of buildings, three residence-sized and one larger, fronted Marginal Way to the south in the area that is now the eastern portion of the south parking lots. One of those residences still exists at 10035 East Marginal Way South and is owned by East Marginal Associates; this residence is not a part of the BDC facility. This cluster of

buildings likely included the grocery store and gas station described in the RCRA assessment because the assessment mentions that the grocery/warehouse building burned down in the 1940s and the larger of the buildings appears razed and the ground blackened in the 1946 photograph.

South of the vacant area to the south of the lumber mill were two more buildings in the approximate location of the current Building 9-99, and another small slip with floating logs. South of the small former Slip 7 there was at least one large building and possibly two or three smaller buildings. This area also contained stacks of logs and/or milled lumber. East of Slip 7 the land appears to have been cultivated. Three buildings are clearly visible at the northern edge of the farmed land. Another building, potentially a residence, was located just off the LDW at the southern edge of the farmed land approximately in the area of the current Building 9-120. The in-water structures that can be seen south of Buildings 9-120 and 9-80 in current aerial photos are visible in the view from 1936.

With the exception of the structures mentioned above, and a possible small dock at the southern end of the northernmost lumber mill, there appears to be relatively little use of the LDW for moorage or waterway. A possible wall or riprap structure is visible along the LDW shoreline for almost the entire length of what is now S 104th Street. In 1936 there were multiple structures fronting the north side of that road with more cultivated land behind them to the north. Those buildings would have occupied the land where the southern parking lots now lie.

The area to the south, currently referred to as the Strick Lease Storage Yard, was primarily cultivated with two or three possibly residential buildings along the road that is known as S 104th Street.

1946

This photograph documents the increased development taking place along the LDW. The eastern half of Slip 6 appeared to have silted in. Several of the buildings from the lumber mill on the southwest side of Slip 6 had been razed and the piles of milled lumber were no longer present on that portion of the property. A large shadow indicates the presence of some kind of tower or stack at this location.

One of the buildings and the possible tank structure in the northeast corner are no longer visible in 1946. To the south, the four tanks seen in the 1936 photograph cannot be seen in the one taken in 1946. However, additional structures were constructed in that area and 12 tanks (4 large and 8 smaller) were constructed farther back from Marginal Way.

The two buildings to the south seen in the 1936 photograph were razed some time before 1946 and more structures were present just south of that area. Additional structures are also visible in the area where the stockyard and slaughterhouse appeared to be in 1936. A line of train cars were also present between the buildings and Marginal Way.

To the south of the stockyard the large grocery/warehouse building visible along Marginal Way in the 1936 photograph appears razed and the ground blackened in the 1946 photograph. The area that today is the south parking lots and Strick Lease Storage Yard appeared largely cultivated or vacant in 1946, with the exception of the portions of the property directly adjacent to the roads.

The smaller of the two buildings north of Slip 7 had been razed and the slip itself appeared to be largely filling in with the only water being in a creek with small branches. Three additional structures were built to the east of the lumber piles at this slip and a cluster of small structures

were built across the road to the northeast of the mill. To the north of Slip 7 a ladder or stair type structure had been built out into the LDW and four or five boats were moored along the shore.

The small structure (a residence?) visible southeast of the lumber yard on Slip 7 in the 1936 photograph appears to have been razed by the time the 1946 photograph was taken. The adjacent land to the west also appears to have been cultivated.

1956

The interior portion of Slip 6 appears to have silted in, with water entering the slip from the north side. The land across Slip 6 at the current Container Properties location was developed with multiple buildings and 2 large and 12 smaller storage tanks. The area on the south side of Slip 6 that was occupied by the lumber yard appears to have been covered in debris. Only one of the buildings seen in the 1936 photograph was still present in 1956. There also appears to be multiple railroad tracks crossing this area with two lines of cars going right up to the LDW shoreline. Two ships were tied up along the LDW shoreline just south of Slip 6. The 77,000-square foot granary was built south of the lumber mill within the last decade and can be seen in this photograph.

East of the granary, an additional large building was constructed and the four large and eight smaller storage tanks were more clearly visible. Additional structures were constructed to the south, in approximately the area that is currently the south side of Building 9-51. More structures were also constructed along the south side of what is now S 96th Place.

The area that was likely the stockyard seen in the photographs from 1936 and 1946 was almost entirely cleared by 1956. No train cars appear in that area of the property in 1956. Clearing of land in the central southern portion of the property was begun for construction of what are now Buildings 9-101, 9-50, 9-65, 9-80, 9-120, 9-130, and 9-140.

The lumber yard at Slip 7 was still apparent in 1956, with multiple buildings, log booms, and stacks of milled lumber.

The auto wrecking yard is clearly visible in the area that is currently the south parking lots and the Strick Lease Storage Yard. There appears to be one large possible warehouse structure immediately north of the wrecking yard with an additional large building north of that. It is unclear if those buildings are associated with the wrecking yard or were a separate entity. Approximately nine structures appeared to be within the wrecking yard lot.

1960

A large building appears to be either under construction or demolition on the south shore of Slip 6 at the former location of the lumber mill. The ground appears to be covered in debris in several places in this area. There were multiple lines of train cars in this area, with some stopped right by the LDW shoreline. No boats or barges, however, were tied up along the shore in this area. At least one of the train lines serviced the granary. Southeast of the granary, the eight smaller storage tanks were removed, with the four larger tanks remaining.

Slip 7 in the central portion of the property was still being used to float lumber in 1960. Slip 7 was in the area now occupied by the northern portion of Building 9-96 and the western portion of Building 9-98. The building on the north side of Slip 7 was either partially or totally demolished; in the photograph taken in 1960 a small building or portion of the larger building was still

standing. At least one dozen structures associated with the lumber mill as well as dozens of stacks of milled lumber can be seen on the land south of the slip.

The two buildings seen in the 1956 photograph in the approximate location of the current Building 9-55 were demolished and the land cleared in the 1960 photograph.

The following buildings were constructed on the southern half of the property by Boeing: 9-101 (smaller in 1960 than it is today), 9-50, 9-65, 9-80, 9-120, 9-130, and 9-140. There is also a structure in the 1960 aerial photograph in the approximate location of what is now Building 9-94 or the adjacent parking lot; however, that structure does not appear to have the size and shape, and it may have been completely or partially torn down prior to construction of Building 9-94 in 1961. Most of the southern half of the property was converted to impermeable surfaces during the period between the photographs taken in 1956 and 1960. A large circular storage tank was present at the north edge of the paved Boeing property, south of S 96th Place.

The large building complex that was just southwest of the stockyard in the earlier photographs was still present in 1960, surrounded by Boeing operations and buildings to the north and west. The two warehouse-sized buildings on the north side of the auto wrecking yard were replaced by what appears to be a dirt parking lot with some grassy or cleared space in the middle. It is unclear if the parking area was part of Boeing at that time. The wrecked cars as well as two of the 6 structures fronting Marginal Way had been removed. The bridge across the LDW at S 102nd Street was constructed.

The northern half of the Strick Lease Storage Yard to the south of the BDC was still vacant at the time the photograph was taken in 1960. A large swath of land to the east across Marginal Way was paved to create the Military Flight Center.

1969

In 1969, Slip 6 was dredged and was in the shape and size it is today although the shoreline still appeared soft. Traces of the old lumber mill, including what appeared to be debris piles in the photographs from 1956 and 1960, were no longer apparent in 1969. Land at the head of the slip was a storage yard for what appear to be either train cars or trucks. No train cars are visible in the area of the former lumber mill or by the granary. A structure was built out into the LDW at the end of one of the rail lines southwest of the granary. The relatively tall shadow cast by the structure indicates it may have been a covered loading dock.

The cluster of approximately 10 buildings that were north of S 96th Place were demolished and replaced with a parking lot.

Buildings constructed during the previous period included: 9-35, 9-43, 9-48, 9-49, 9-59, 9-60, 9-61, 9-85, 9-90, 9-94, 9-96, and 9-98. Building 9-101 was expanded onto the parking lots to the east and south. Slip 7 was completely filled in and Building 9-99 and a large parking area were constructed in its place.

The building complex south of Building 9-101 that was formerly adjacent to the stockyard was demolished and replaced with part of the new building and a parking lot. Three structures were constructed on the very southern portion of the property north of S 102nd Street and it appeared to be used for storage of some kind. The Strick Lease Storage Yard property was cleared at the time the 1969 photograph was taken.

The sunken structure visible along the shoreline just downstream of the S 102nd Street bridge in current photographs can be seen in the photograph taken in 1969. It is possible this may have been a barge tied up along the shore or a ramp.

1977

The six dock structures on the southern shoreline of Slip 6 were constructed and the shoreline appears hardened in the photograph taken in 1977. The area to the north of the granary appears to have been entirely paved and used for material transfers at the docks. The overwater structure that had been southwest of the granary was demolished or removed and the shoreline straightened and hardened or rip rapped from Slip 6 south to the Seattle City Light right-of-way.

The building that had been immediately south of the granary, and which may have been associated with the winery, had been demolished along with the four round storage tanks. Two new structures are visible immediately adjacent to the granary building on the southeast side.

A line of rail cars is clearly visible at the northeastern part of the property and the three buildings that had been in that area in 1969 were razed. The Port of Seattle bought this property in 1976 (SAIC 1994) and leased the land to Kenworth Truck Company and Transport Pool International for parking and storage.

Apart from the occasional tree, the strip of land that is currently the Seattle City Light right-of-way is the only area on the property in 1977 that appears to have had any vegetation. The right-of-way was clearly defined in this photograph although the overhead power lines were not yet visible.

Buildings 9-64 and 9-66 were constructed in 1970 and 1975, respectively.

More materials appear to be stored in the southernmost portion of the property that later became part of the south parking lots.

1980

A small watercraft can be seen moored in Slip 6. The northeast portion of the property is clearly entirely paved in the photograph. Truck trailers can be seen stored in this area. No rail cars are evident, and it is unknown if the railroad tracks were still in existence in this area. To the south, the operations of Dallas-Mavis, a commercial trucking company (SAIC 1994), can be seen where upwards of one hundred big-rigs are parked.

Most of the structures and materials surrounding the granary building, including its loading/unloading structure, had been removed. A large debris pile can be seen adjacent to the LDW southwest of the granary. To the south, the power lines can be seen crossing the LDW from the Seattle City Light right-of-way.

Building 9-69/70 was constructed in 1980. However, a recent map of the BDC (Boeing 2009c) does not label this building and it is unclear from earlier maps (e.g., Figure 16 in EAA-7 Data Gaps Report by E&E 2007) if it is visible in the photograph taken in 1980. Building 9-54 was also constructed in 1980 but it does not appear to have been completed before the aerial photo was taken.

Rusty metal colored materials appear to be stored in the southernmost portion of the property that later became part of the south parking lots. What appear to be very large tires (tractor or trailer-sized?) can also be seen in this area in the 1980 photograph.

What might be a barge can be seen along the shoreline just north of the S 102nd Street bridge at the ramp-like structure. There appears to be one or two cranes onshore northwest of the structure in the water.

1990

Several buildings were constructed at the BDC during the 1980s and the property began to look largely the way it does today. Buildings 9-05 and 9-07 can be seen in the northern part of the property as well as a large circular tank and Building 9-403, which is now part of the Museum of Flight. The Dallas-Mavis building can be seen but it does not appear as though that company was still operating on the property as the commercial trucks are gone and there were only a few trailers. The rest of that area was converted to parking.

The granary was demolished and Buildings 9-08 and 9-77 built in its location in 1990 and 1986, respectively. Large parking lots and small amounts of landscaping surrounded those buildings. To the south, a walking path and landscaping can be seen in the Seattle City Light right-of-way. To the east, the buildings that may have comprised the winery were demolished and replaced with Building 9-51, which was constructed in 1986. Building 9-52 was constructed west of 9-51 in that same year. A large parking lot was constructed southeast of Building 9-51. In 1987, the large Building 9-53 was constructed to the south of Building 9-52, between the right-of-way and S 96th Place.

Buildings 9-42 and 9-67 were constructed east of Building 9-50 in 1985. Building 9-103, directly adjacent to the north wall of 9-101, was also constructed in 1985. Four new structures that no longer exist can be seen in the photograph to the north and east of the northeast corner of Building 9-101. Building 9-102 was constructed to the southwest corner of Building 9-101 in 1983. A bridge was constructed over the LDW at the intersection of Francis Street and S 98th Street. What appears to be multiple above ground storage tanks (ASTs) can be seen on the perimeter of Building 9-101 on the southeast and southwest sides. Another structure that may have been a large AST can be seen just west of the bridge at S 98th Street by Building 9-85.

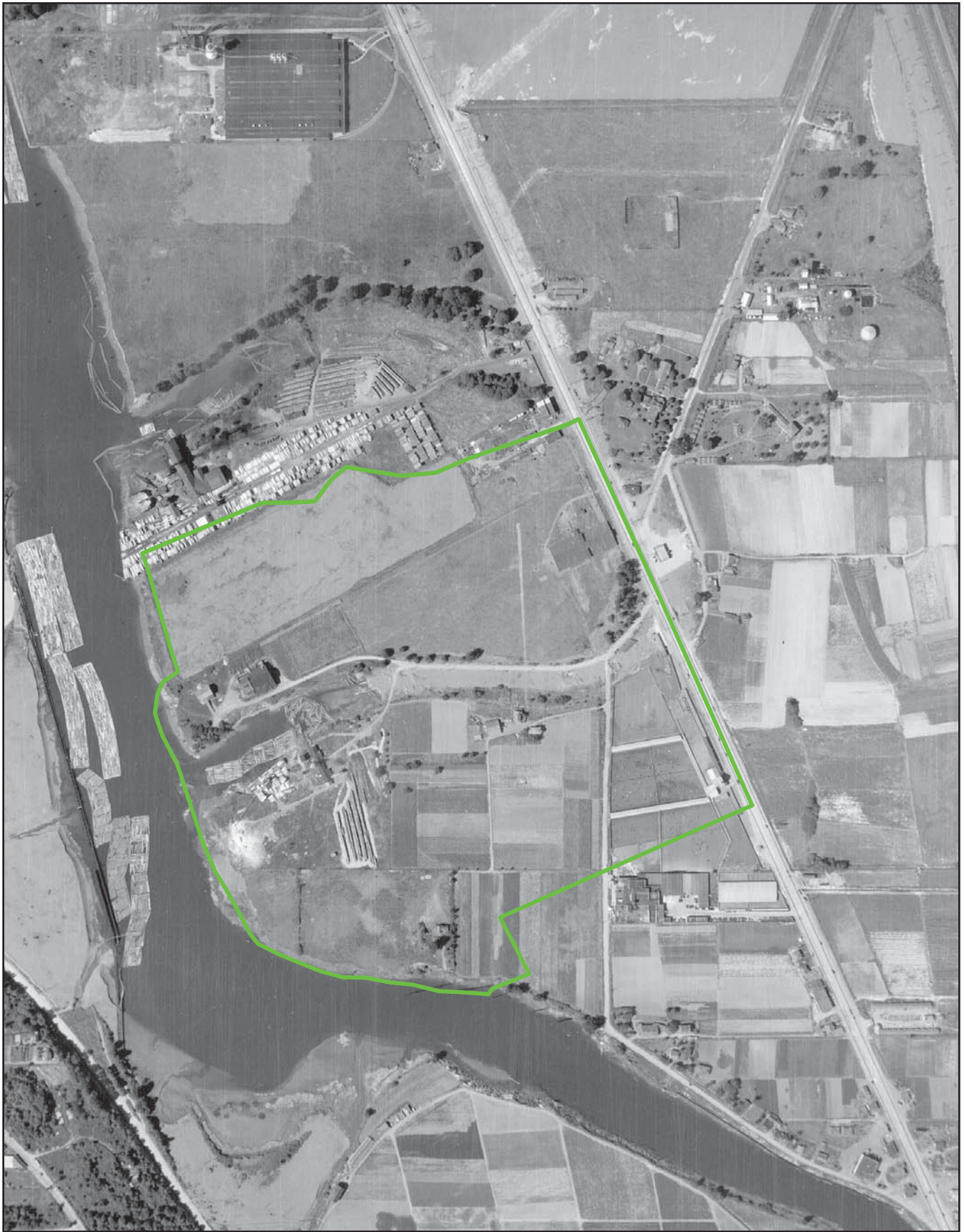
The south parking lots appeared in the 1990 photograph as they do today; all storage operations of truck trailers and unknown materials ceased. The crane(s) that had been along the shore northwest of the S 102nd Street bridge in the 1980 photograph was removed by the time the 1990 photograph was taken.

1999

On the northwest section of the site, a portion of the parking lot closest to the LDW was reclaimed as natural area and Building 9-112 (the cafeteria) was constructed in 1991. According to King County tax records, this was the last building constructed on the BDC property. An unknown structure or structures can be seen on the north side of S 94th Place between the MOF and Building 9-77.

2004

The only notable change between the 1999 and 2004 photographs is the addition of what might be three air venting structures on the north side of Building 9-50. All other structures and the shoreline appear similar.



**Figure B-1. RM 4.3-4.9 East
(Boeing Developmental Center): 1936**





**Figure B-2. RM 4.3-4.9 East
(Boeing Developmental Center): 1946**





**Figure B-3. RM 4.3-4.9 East
(Boeing Developmental Center): 1956**



**Figure B-4. RM 4.3-4.9 East
(Boeing Developmental Center): 1960**



Figure B-5. RM 4.3-4.9 East
(Boeing Developmental Center): 1969

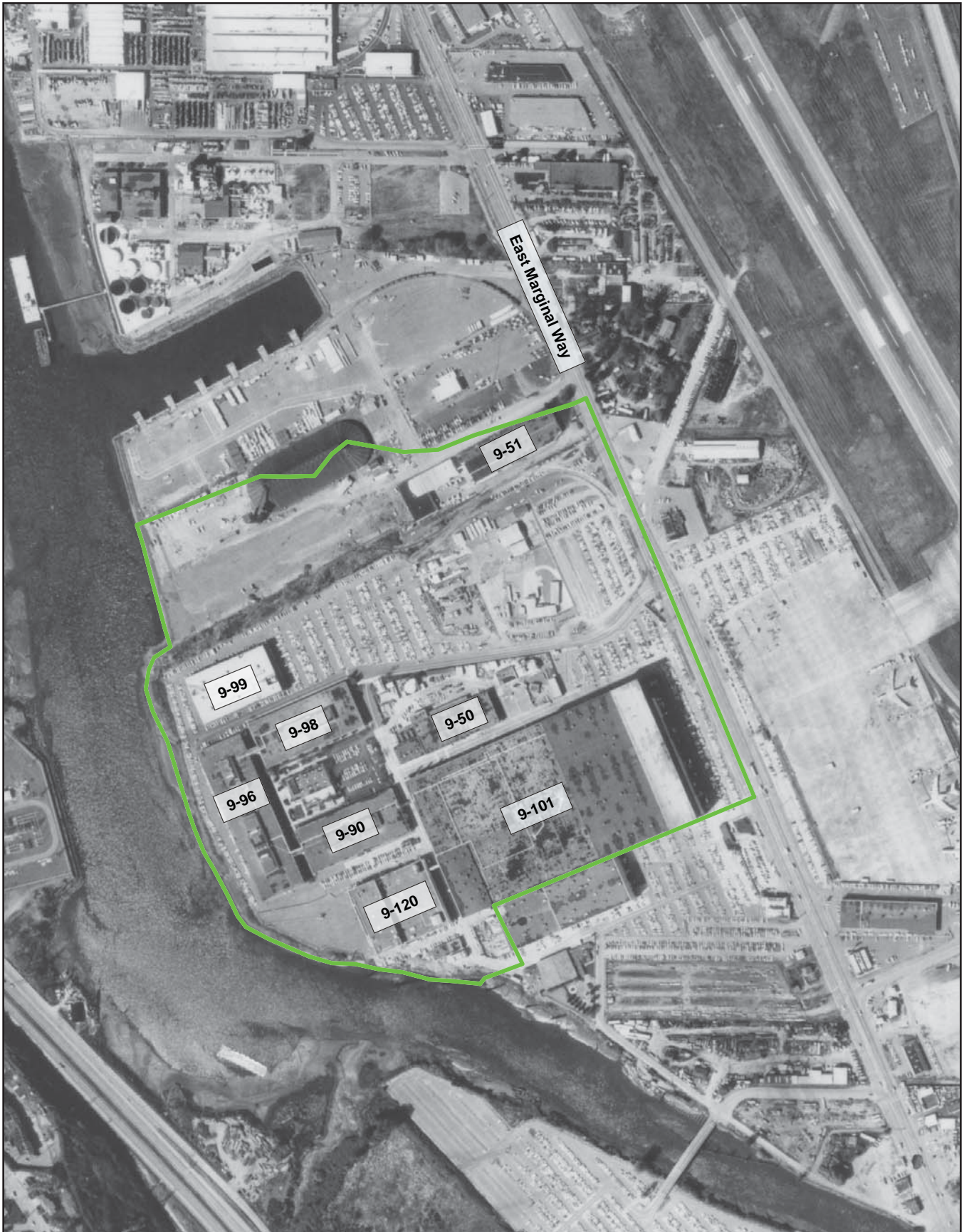


Figure B-6. RM 4.3-4.9 East
(Boeing Developmental Center): 1977



Figure B-7. RM 4.3-4.9 East
(Boeing Developmental Center): 1980



Figure B-8. RM 4.3-4.9 East
(Boeing Developmental Center): 1990





Figure B-9. RM 4.3-4.9 East
(Boeing Developmental Center): 1999



Figure B-10. RM 4.3-4.9 East
(Boeing Developmental Center): 2004