

ITEM

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MANAGER'S REPORT NO. 55

COUNCIL MEETING 1983 09 12

RE: PROPOSED REACTIVATION AND EXPANSION OF TEXACO TANK FARM FOR  
HANDLING OF METHANOL AND RELATED ALCOHOL DERIVATIVES

MUNICIPAL MANAGER'S RECOMMENDATION:

1. *THAT the recommendations of the Director Planning & Building Inspection be adopted.*

\* \* \* \* \*

TO: MUNICIPAL MANAGER  
FROM: DIRECTOR PLANNING & BUILDING INSPECTION  
SUBJECT: PROPOSED REACTIVATION AND EXPANSION OF TEXACO TANK FARM FOR HANDLING OF METHANOL AND RELATED ALCOHOL DERIVATIVES.

1983 SEPTEMBER 06  
OUR FILE: 15.003.1

RECOMMENDATIONS:

1. THAT Council approve, in principle, the proposal to utilize the Texaco Tank Farm for the handling of Methanol and related Alcohol derivatives consistent with the M7a (Marine District) zoning requirements.
2. THAT, prior to the issuance of Preliminary Plan Approval and a Building Permit, staff be instructed to ensure that satisfactory measures are provided for environmental control including site spill control, containment and recovery facilities; fire protection systems and facilities; access roads, including the provision of an alternative access for emergency purposes; and the certification by a registered Engineer as to the integrity and reliability of the existing tanks and ancillary equipment.
3. THAT a copy of this report be forwarded to:  
  
Mr. R.C.E. Kitching  
Project Manager  
Johnston Terminals Ltd.  
P. O. Box 5300  
Vancouver, B. C. V6B 4B6

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SUMMARY:

The following report provides Council with information on the proposal to reactivate and expand the Texaco Tank Farm for the storage and handling of Methanol and related Alcohol derivatives. This report concludes that, although numerous modifications are required for environmental control and for the upgrading of protection systems, the existing Texaco Tank Farm can be made adaptable for the storage and handling of methanol and alcohol derivatives. Particular attention will need to be paid to this proposal to ensure that potential conflicts with the adjacent Barnet Marine Park are minimized.

REPORT

BACKGROUND:

The subject lands are located within the Barnet Marine Park as illustrated on the attached Figure 1. As part of the implementation of the Marine Park Concept, the Municipality acquired certain lands as shown on the attached Figure 2. The acquisition agreement, which was negotiated in 1975, provides for Texaco to retain two acres of vacant land to the east of its plant to provide for expansion in the future. The Municipality negotiated the right of first refusal to purchase all or any part of this two acres if it is no longer required for expansion purposes. Further, it was made abundantly clear to Texaco that we did not have the authority to bind future Councils to agreeing to any form of expansion program. Also, the entire Texaco holdings were rezoned from M3 (Heavy Industrial District) to M7a (Marine District) to ensure that they cannot be developed for anything but a marine use or the possible extension of the existing tank farm.

The M7a zone provides for the regulation and location of water-oriented uses and related activities in proper relationship to surrounding development. The storage of petroleum products is a permitted use in the M7a zone.

EXISTING SITUATION:

1. EXPANSION PROPOSAL

We are in receipt of a letter advising that Johnston Terminals Limited proposes to reactivate the Texaco Bulk Storage Terminal to handle Methanol and related Alcohol derivatives. In principle, it is their intention to reactivate the terminal, clear and refurbish the existing facilities and to add additional tanks. They also intend to reconstruct the dock approach causeway and build a suitable marine structure for berthing appropriate sized vessels. The existing rail access will be reactived to accommodate approximately 16 cars, and all safety and environmental equipment overhauled or replaced to provide a safe environment and work place.

The terminal will provide employment for approximately 10 persons on an ongoing basis and will provide significant employment for construction trades during the refurbishing period.

Applications have been submitted to the Ministry of Environment for a permit under the Waste Management Act (Effluent and Emissions).

Prior to proceeding with this proposal, Johnston terminals has requested the details as to the appropriate Municipal permits which may be required.



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## 2. SUITABILITY OF PROPOSED USE

If we were in a position of examining this proposal as a new use which would be situated within a major marine park, it is certain that it would not be viewed as a compatible use. However, the Tank Farm was located on Burrard Inlet prior to the establishment of the Barnet Marine Park. In fact, its continued operation and expansion was recognized in the acquisition of lands for the park and in the preparation of the resultant development plan. Notwithstanding these facts, Council should consider this application in light of its overall objectives for the development of the Burrard Inlet Foreshore.

In order to put this proposal into the proper perspective, the Planning and Building Inspection Department requested other Departments to review and provide comment on this proposal. Their responses are summarized as follows:

### a) RECREATION AND CULTURAL SERVICES

This Department has stated that the recently completed Park/Beach facility due east of Texaco presently attracts in excess of 1,000 people on any given weekend day. Moreover, they are currently reclaiming the foreshore area to the west of Texaco which, once completed, will invite additional people to the area. Consequently, their staff is concerned that no intensification of use of the Texaco site be permitted which will jeopardize either the safety of park users or the safety of the environment.

### b) ENGINEERING DEPARTMENT

The Director Engineering has advised that information submitted by the applicant does not indicate any areas of direct concern to that Department at this time, with the possible exception of traffic generation. Specifically, they are concerned with the truck traffic that may be generated as Texaco Drive, which is the only vehicular access to the site from the Barnet Highway, is constructed to a substandard interim pavement cap. Moreover, the intersection at the Barnet Highway is only controlled by a stop sign. They have stated that it may be warranted to consider a traffic signal and channelization similar to the precedent which was established at the Gulf Oil refinery. They have further noted that, as the Barnet Highway is a Provincial responsibility, the Ministry of Transportation and Highways may have similar concerns regarding traffic volumes and access.

Once additional data becomes available, they will then review that information for further direction.

### c) FIRE DEPARTMENT

The Assistant Chief Fire Prevention Officer has advised that Methanol (Methyl Alcohol) and all related alcohol derivatives are classified as flammable liquids and are considered a dangerous commodity. The transportation of these products under Railroad Shipping Regulations is treated in a manner comparable to gasoline.

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The Provincial Fire Commissioner's and the Municipal Fire Department's approval of plans for the reactivation and/or expansion of these facilities will be required and must include existing and proposed water supplies, fire protection systems and facilities, and access roads; all of which will require upgrading to meet Municipal and Provincial standards.

Certification by a qualified Engineer as to the integrity and reliability of the existing tanks and ancillary equipment will be required as they have been out of service for a number of years.

#### d) ENVIRONMENTAL HEALTH

This Division has reviewed the subject proposal and concluded that, although numerous modifications are required for environmental control, they are of the opinion that the existing facility can be made adaptable for the proposed use.

They advised that generally, the handling and storage requirements for methanol are closely related to gasoline, which was the previous permitted use. However, there are some differences in the general characteristics of methanol and gasoline. They further provided the following comments relative to the review of this proposal:

- i) Definition of methanol and other alcohol derivatives - zoning requirements.

The primary source of methanol today is natural gas. Basically, any material that can be thermally decomposed into hydrogen and carbon monoxide or carbon dioxide is considered a potential source of methanol. Today, almost all of the world's methanol is petroleum derived (from natural gas, refinery light gas streams or naphtha fractions).

- ii) General characteristics and hazards associated with the storage and shipment of methanol and alcohol derivatives - as compared to gasoline.

Flashpoint - Definition: Flashpoint is the lowest temperature which allows enough vapour formation to form an ignitable mixture. Methanol: +52°F Gasoline: -45°F.  
Auto ignition temperature - Definition: Minimum temperature it takes for the product to ignite itself.  
Methanol: 725°F, 385°C Gasoline: 536°F, 280°C  
Flammability Limits (Explosive limits) - Definition: Concentration of vapour in which flame is self-propagating (given as percentage concentration of product in air).

Methanol: 6.0% to 36% Gasoline: 1.4% to 7.6%

Boiling Point: Methanol 147°F, 64°C Gasoline: 100°-400°F, 38°-204°C

Threshold Limit Value - TLV - Definition: An exposure level under which most people can work consistently for 8 hours a day, day after day, with no harmful effects.

Methanol: 200 ppm (parts per million)

Gasoline: 500 ppm (a low number indicates a higher toxicological hazard)

Vapour hazard - Definition: An overall hazard comparison index. This takes into account the TLV and potential for vapourization of the product. Methanol: 820 Gasoline: 176

(A higher number indicates higher hazard.)

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In analysing the foregoing information, they have stated that insofar as health hazard is related to employees on the plant site or to nearby park patrons is concerned, they are of the opinion that methanol has more potential for health effects as shown by the vapour hazard comparative index. The Fire Prevention Office has provided information which rates both commodities as having a dangerous fire hazard rating.

iii) Site spill control and containment requirements

An inspection conducted on 1983 August 03 of the Texaco Bulk Terminal facility revealed that numerous areas at the facility would require upgrading relative to product spill control, containment and recovery. Currently, the Texaco facility contains four bulk storage tanks ranging in size from 750,000 to 1,500,000 gallons. The immediate area surrounding each tank is dyked and designed to contain the entire volume of product stored in the tank. Each containment area is drained directly into the Inlet. An existing rail tank car loading area is located on the rail spur line. No containment is provided in association with the rail loading area.

The Environmental Health Department has contacted the Federal Department of Fisheries and Oceans to determine methanol's toxicity to the aquatic environment. Methanol is less toxic to fish (trout) than gasoline. Stronger concentration is required to produce lethal effects on fish (gasoline 100 ppm, methanol 8,100 ppm). Methanol which is accidentally discharged into the Burrard Inlet would dissolve in water, making it impossible to recover. With this in mind, land-based control and containment measures must be designed to provide total containment of stormwater which may contain spilled methanol.

The Environmental Health Department is currently in receipt of a copy of an application under the Waste Management Act for the discharge of stormwater originating from the Texaco facility to the Inlet. They have requested the Waste Management Branch to not issue a permit unless adequate spill prevention control procedures for methanol are provided. The Environmental Health Department staff will be reviewing these procedures with the Waste Management Branch and the applicant.

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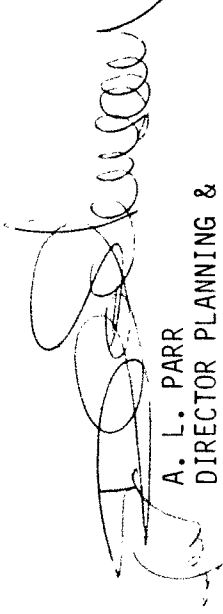
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e) PLANNING AND BUILDING INSPECTION DEPARTMENT

The essential question for this Department has been one of the acceptability of the proposed use relative to the development objectives embodied in the Barnet Marine Park Development Plan. As a basic principle we are opposed to the intensification of a use which is not in keeping with the public recreational character of the surrounding marine park.

However, we recognize the fact that Texaco has historically operated at this location and that the negotiations to acquire lands for the development of the park provided for the continuation and expansion of the Texaco facilities. Therefore, we believe it is in order for Council to approve the subject proposal in principle on the proviso that sufficient safeguards are incorporated into the development approval process to ensure that requirements for environmental and protection facilities, which are noted herein, are satisfied.

This Department would be responsible for ensuring that these matters are attended to as a condition of Preliminary Plan Approval and the subsequent receipt of a Building Permit.



A. L. PARR  
DIRECTOR PLANNING &  
BUILDING INSPECTION

PB/jce  
Attach.

cc: Chief Public Health Inspector  
Chief Fire Prevention Officer  
Director Engineering  
Director Recreation & Cultural Services

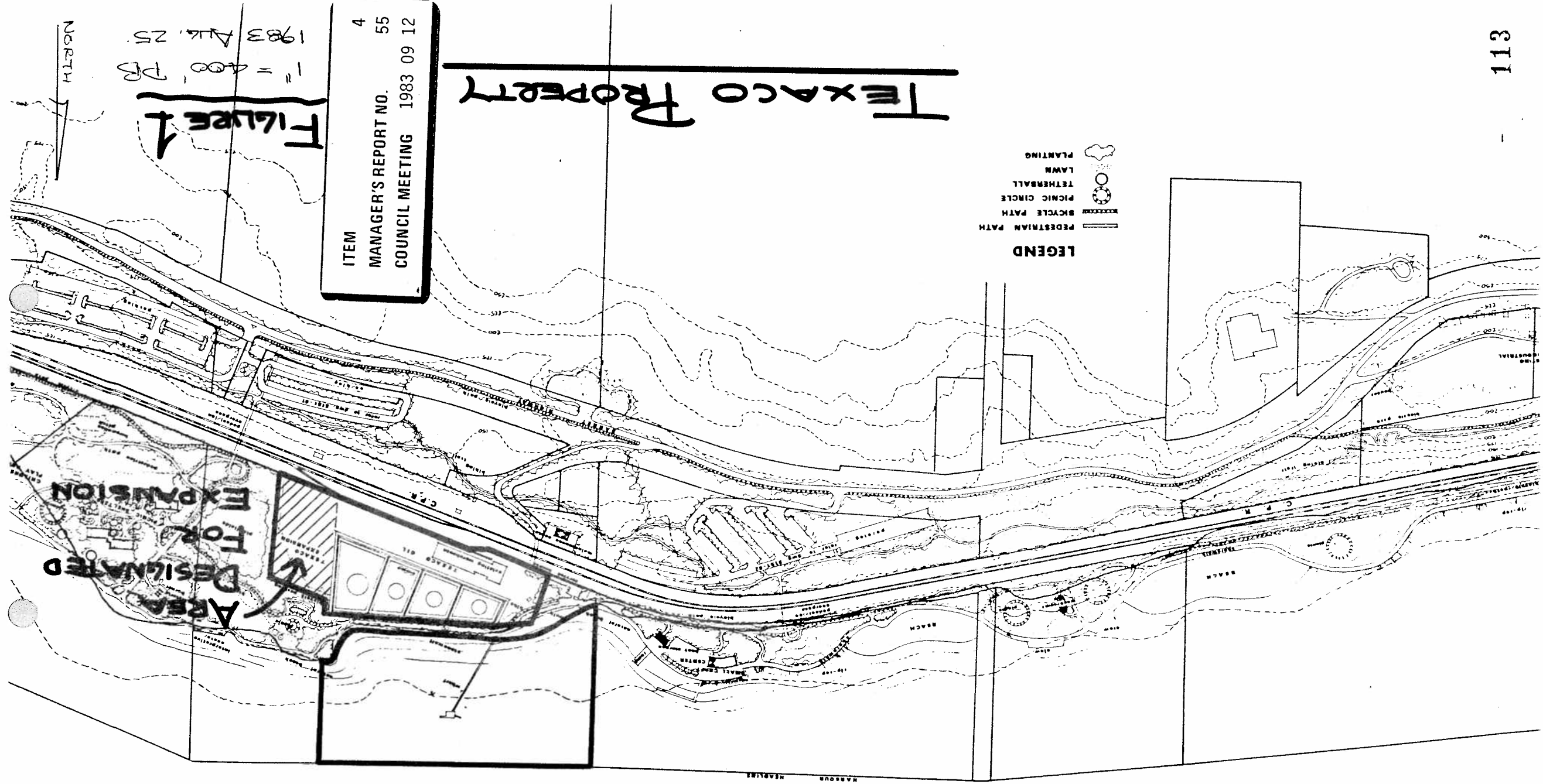
# TEXACO PROPERTY

- LEGEND**
- PEDESTRIAN PATH
  - BICYCLE PATH
  - PICNIC CIRCLE
  - TETHERBALL
  - LAWN
  - ☁ PLANTING

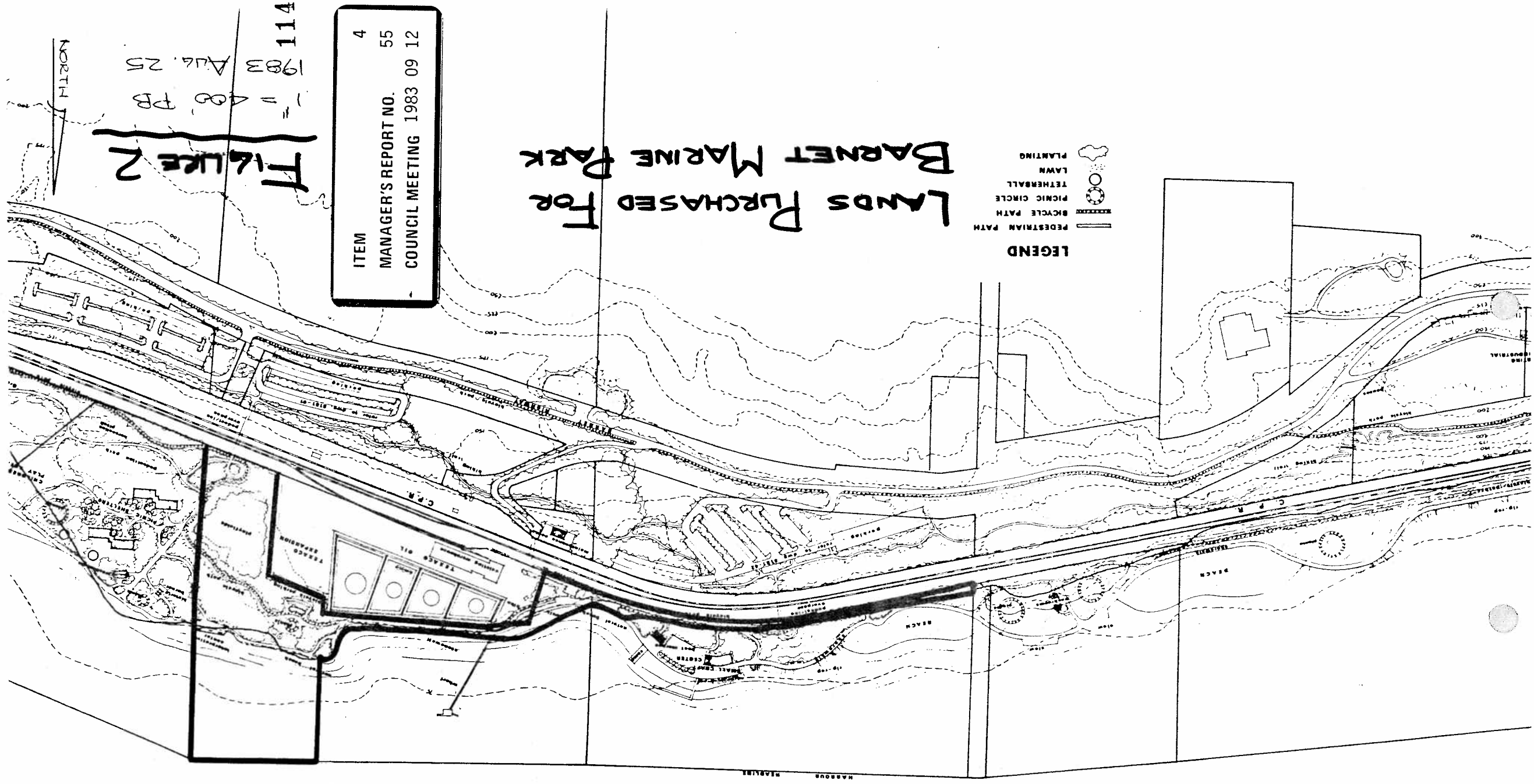
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Figure 1  
 1" = 400' DB  
 1983 Auk. 25

NORTH



HARBOR NEARLINE



LANDS PURCHASED FOR  
BARNET MARINE PARK

- LEGEND**
- PEDESTRIAN PATH
  - BICYCLE PATH
  - PICNIC CIRCLE
  - TENNISBALL
  - LAWN
  - PLANTING

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Figure 2  
1 = 100 FB  
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