
**Smith & Bybee Lakes Natural Area
Management Committee**

Nancy Hendrickson, Chair

Coordinated by:

Metro

600 NE Grand Ave.
Portland, OR 97232
(503) 797-1870

Smith & Bybee Lakes Management Committee Meeting

5:30 p.m. - 7:00 p.m., Tuesday, February 22, 2000
Metro Regional Center, Room 270
600 N E Grand Ave.
Portland, Oregon 97232

AGENDA

<i>Call meeting to order; Introductions</i>	5:30 - 5:40 pm
<i>Review and approval of December, January meeting notes</i>	
<i>Updates</i>	5:40 - 5:55 pm
<i>Discussion- Model Airplane Club – Special Use Permit – Dennis Meyer</i>	5:55 - 6:20 pm
<i>Discussion - Dam Removal – Jim Morgan</i>	6:20 - 6:45 pm
<i>Discussion - Port of Portland Water Management/ Conservation Plan- Jim Morgan</i>	6:45 - 6:55 pm
<i>Set March Agenda</i>	6:55 - 7:00 pm
<i>Adjournment</i>	7:00 pm

Enclosure: copy of Model Aircraft Assoc Special Use Permit

**Smith & Bybee Lakes Management Committee
Summary Meeting Notes**

Metro Regional Center
Room 270
February 22, 2000
5:30 PM

In Attendance:

Troy Clark *	Portland Audubon Society
Christel Mantel	PSU student
Peggy Krause	Port of Portland
Dennis Meyer	Portland Area Model Aircraft Assoc.
Bill Briggs *	Merit USA
Peter Teneau *	Friends of S & B Lakes
Elaine Stewart	Metro – Parks & Greenspaces
Nancy Hendrickson *	Portland – Bureau of Environmental Services
Pat Sullivan	Metro – Parks & Greenspaces
Jim Sjulín *	Portland – Bureau of Parks
Jim Morgan *	Metro – Executive Officer's Rep
Dennis O'Neil	Metro – Regional Environmental Mgmt
Bill Egan	Oregon Hawg Hunters
Kevin O'Sullivan *	St. Johns Neighborhood Assoc.
Pam Arden *	40 Mile Loop Land Trust
Chris White	Port of Portland
Mikey Jones	Interested Citizen
Dan Kromer	Metro – Parks & Greenspaces

* - voting member

Introductions/Review and Approval of Meeting Notes

A welcome was extended to Elaine Stewart, new Smith & Bybee Lakes Wildlife Area Manager.

December 1999 and January 2000 Meeting Notes were both reviewed. Dennis O'Neil of Metro, REM, made a revision to the Landfill Bank Repair Project section on pg. 2 of the January notes, eliminating the bio-benches as an alternative offered by REM. The December meeting notes were approved as read and the January notes were approved as amended.

Updates

- Elaine reported that little progress has been made on the "triangle piece" of property; the issue of industrial access referred to in the appraisal report is still being researched. Metro's review appraiser recommended direct contact with a City of Portland Bureau of Transportation planner as the most useful next step.
- A purple loosestrife project meeting will be held next week to focus on the best site at Smith & Bybee Lakes to conduct field research.
- A meeting of the citizens working group for the new Multnomah County Jail will be held Feb. 23rd at T-6 from 6:00 to 8:00 pm. At that time a number of sub-committees will be formed, one of which will focus on construction and will examine the environmental buffer, berm construction, etc.
- The next round of designs for review for the North Marine Drive Widening Project should be available the week of March 7th.

- A meeting will be convened soon with Columbia Steel Casting concerning its permit application to fill the side channel of the Columbia Slough. Several members of the Management Committee will be in attendance as well as representatives from the Division of State Lands.
- Kevin O'Sullivan of the St. Johns Neighborhood Assoc. reported that group has voted to send a letter to Metro encouraging it to refrain from herbicide spraying at the lakes until an herbicide policy can be developed. The Management Committee will receive a copy of the letter as well.

Discussion – Model Airplane Club – Special Use Permit – Dennis Meyer described his organization as being strictly regulated. Operators must have evidence of proper insurance, adhere to radio frequency limits and fly only in approved areas. Questions raised included elevation of the model planes, where on the landfill the site may be located and how to control access to it. Elaine commented that the Special Use Permit does not address the issue of wildlife disturbance and voiced concerns such as noise levels, possible collisions with raptors and the inhibiting of nesting practices at certain times of year. Jim Morgan suggested the possibility of a model airplane flight over the landfill at which committee members may observe (and listen) from various parts of the wildlife area to better understand what kind of impact may occur. Dennis Meyer offered to arrange such a demonstration although no details were set at this time.

Jim Sjulín commented that although the management plan describes a model airplane flying facility as a potential development project, from a land management point of view, he sees two problems: 1) the incongruity of including a model airplane facility in a wildlife habitat area and 2) a list of conditions incorporated into the permit need to include mitigation for potential impacts to wildlife.

Discussion - Port of Portland Water Management/ Conservation Plan – In 1993 a permit was granted to the Port of Portland to withdraw water from the Columbia and Willamette Rivers for non-potable use, coinciding with a water conservation plan it was developing with the City of Portland. Included in that permit was the authority to withdraw water from the Columbia River for augmenting water levels at Smith & Bybee Lakes. At the time it was thought necessary to be able to increase water levels at the lakes to deal with potential avian botulism. With this additional benefit accorded to Smith & Bybee Lakes by the permit, Metro supported its issuance. A requirement of that permit was the submission of a Water Management and Conservation Plan. Although it is late in arriving, the Port has recently submitted a draft plan for water resources to the Oregon Water Resources Department. The period for public comment has been extended to March 30th. A copy of the plan was distributed to committee members who were asked to review it for discussion at the March 28th meeting.

Discussion – Dam Removal

Jim Morgan related the historical background of this issue. There were a number of studies done beginning in 1982, the first by the US Geological Survey. Other testing followed including regular water quality sampling begun in the early 1990's, a fishery survey in 1991, and a 1992 survey using sediment cores to look at the history of the lakes over a few thousand years. The purpose of the latter was to obtain an idea of the water quality changes that have occurred and to predict any future trends. Some hydrological modeling was also done to analyze: the effects of the flow through the existing canal systems -with and without a dam- if Bybee Lake was opened up to the Slough and how the flows would affect the main lakes in terms of water levels. A survey of vegetation was also done as well as of other biota of the lakes, including amphibians, reptiles and mammals. These efforts were made to develop a benchmark of the current health of the lakes' ecosystem – to compare to the past, to assist with future management decisions that might affect the system and to evaluate whether they are successful or not.

These studies, done over a seven year period, were compiled by Jim Morgan in 1996 in a document called the *Diagnostic and Feasibility Study of Smith & Bybee Lakes*. It summarizes a number of the studies and surveys which were reviewed by the Technical Advisory Committee (TAC) of Smith & Bybee Lakes. Most groups or organizations with any kind of regulatory authority over this area were a part of this process. The TAC is comprised of, among others, the Army Corps of Engineers, National Marine

Fisheries Service, Oregon Dept. of Fish & Wildlife, Portland Audubon Society and Division of State Lands.

A number of management options were considered at the TAC meetings. Issues dealing with vector control, entrapment of migratory smolts by the existing dam and disturbance to the current status of the system (which promotes a warm water fishery) were among those discussed. An attempt was made to develop a water management strategy that addressed all the issues. Jim Morgan further stated that the current structure is inflexible in terms of water level options and allowing any kind of semblance of natural exchange with the Willamette River.

The consensus of the natural resource management agencies was that the present water control structure should be removed. Further details of the recommendation (a copy of which was distributed to committee members present) are described on page 54 of the *Diagnostic and Feasibility Study*. Copies of the complete study will be available at the next meeting for those interested.

Mikey Jones suggested the committee also refer to the 1987 Smith & Bybee Lakes Environmental Studies, Summary Report, listed as a reference in the Natural Resources Management Plan for S & B Lakes.

An agenda was set for March including:

- discuss and make comments on the Water Management & Conservation Plan
- create needed sub-committees on such topics as dam removal and model airplane facility

Updates

Triangle property appraisal (ems): Metro staff met w/ open spaces review appraiser who suggested that we directly contact city planner to test assumption of industrial access; we are trying to schedule meeting

Purple loosestrife (ems, Troy): Dr. McEvoy & other researchers will be on site on 2/28 to select project locations; Elaine & Troy will accompany them

County jail group (ems): working group meeting tomorrow night, construction subcommittee will be formed to review buffer design. Are there others who may want to participate? Nancy & Peter said they already are; with Troy & Elaine, there is adequate representation

North Marine Drive (ems): next round of designs should be available for review around 3/7

Columbia Steel Casting (Troy): Troy called ACE (Corps of Engineers) re the CSC permit application. ACE said that CSC has not re-vegetated the area where their illegal fill had been; this is a requirement before ACE will move on their permit application. Troy will work with DSL, ACE, CSC and Elaine to schedule a meeting re next steps

St. Johns NA (Kevin): voted unanimously at their last meeting to request that Metro not use herbicides on the wildlife area. A letter to Metro/SBMC will be forthcoming

Model Airplaners (Dennis Meyer)

They go to landfills all over the US – common venue for their activities

They are losing their other local flying sites at Clark County Fairgrounds and Camas-Washougal (Port property); other "highest & best uses" tend to be found for lands they have used – for example, they had an interim site at Kelley Point until Hyundai bought the land

Club is flexible about siting anywhere on landfill – currently are looking (w/ REM) at site in SSW area:

- They would use a 500 x 2000' area for flying
- Substrate would be dryer felt from pulp mills
- Planes have 3-5' wingspans
- Planes go 300-400' high near airports, can go higher

What is wildlife disturbance potential? How would they address it?

- Noise is a factor – planes produce 92 decibels at a 9-foot distance
- Meyer stated there would be no problem – passed out map of campground with shooting range as example of refuge where planes & wildlife were considered compatible
- I felt that my questions were dodged and not directly answered
- O'Neill pointed out that the use permit could be revoked if airplaners aren't good citizens
- Morgan suggested a demonstration flight for SBMC to hear for themselves how loud and/or disruptive the airplanes may be; people could scatter around the refuge & listen

I asked how much of the landfill would be dedicated to this purpose. Meyer initially put a transparency over an area that was not to scale, indicating a fairly small area. O'Neill pulled up a properly scaled map and showed that the proposed airfield would barely fit within the roads in the proposed location

Sjulin re-iterated my points, stating that the permit should address wildlife issues and include a monitoring program; there should be conditions in permit to consider wildlife disturbance

Hendrickson suggested a sub-committee of interested persons to address these issues; members agreed and signed up at the end of the SBMC meeting

Water Management and Conservation Plan

Morgan briefed the group on the Port's plan submitted for review to the Oregon Water Resources Dept.; the comment period has been extended to 3/30/00 to allow SBMC to discuss and comment at our next meeting. This is an intro to subject, to be tabled until Gerry Meyer and/or Bill Bach from Port can be at our next meeting
Members will direct any specific questions about the plan to G. Meyer
SBMC interest will primarily be in whether to preserve water right (ability to pump water from Columbia R. into S&B at low water to increase lake area and disperse birds if/when botulism is a problem)

Dam Removal

Morgan reviewed the range of studies conducted to date
Morgan showed a photo of the replacement dam that is currently preferred option, and talked about using an irrigation pump to bring water in from Columbia Slough if/when needed
Members will sign up for dam removal sub-committee at end of meeting.

**SPECIAL USE PERMIT
To
PORTLAND AREA MODEL AIRCRAFT ASSOCIATION
FOR A
MODEL AIRPLANE FLYING FIELD
ON
ST. JOHNS LANDFILL**

✓ wildlife disturbance
✓ Oversight by S & B mgr
✓ need for plan - how to avoid disturbance, resolve issues

INTRODUCTION

There are certain risks to health, safety, and the environment at the St. Johns Landfill. Landfill gas is composed of 50% methane (a flammable, explosive gas) and other gases, most of which are toxic. Small amounts of landfill gas may leak into the air at well heads, the cover edge, etc. Leaking landfill gas has caused people to become ill. Underground fires have occurred and these fires, with an accompanying sudden cave-in and/or hazardous air emissions, may occur in the future.

There is a risk to health, safety, and the environment if the gas collection system is shut down for more than a day. The gas collection system is designed to shut down to prevent an explosion or other safety risk if there is damage to certain components by impact, tampering, vandalism, or by a fire such as a grass fire.

Also, there is a risk that the multi-layer cover cap may be damaged due to erosion, puncturing of the membrane, or differential settlement.

Access to the landfill and activity on the landfill is severely restricted to reduce these risks. The requirements listed below are designed to reduce these risks.

PRE-OPERATION CONDITIONS

1. Before placing materials, carrying out construction, or operating a radio controlled model airplane flying site at St. Johns Landfill, the Portland Area Model Aircraft Association (PAMAA) shall obtain written approval from the Metro Regional Environmental Management Department ("Metro") of the following:
 - A. Comprehensive general liability insurance which conforms to the requirements of Section 7, subsection "Terms of Coverage" of the Metro document "Special Use Permit, Application Procedures and Requirements", names Metro and its Council, members, officers and agents, as additional insureds, and provides thirty (30) days' notice to Metro of intent to terminate. This insurance shall cover risk of accidental death, injury, and property damage to PAMAA members occurring on the St. Johns Landfill, and risk of accidental death, injury, and property damage to others, including Metro, if caused by acts of PAMAA members occurring at the St. Johns Landfill.
 - B. Drawings and specifications for protective covers for all gas, groundwater monitoring wells, and piezometers within the overfly area and safety zone described in the AMA "Recommended RC Flying Site Specifications" attached to the special use permit application by PAMAA. Each cover shall protect the well from damage by model airplanes without interfering with routine monitoring, operation, and maintenance of the well or exposing workers to risk of sprains, strains, or other injuries.

- C. A site plan and drawings, specifications, and construction methods for all structures which will make up the model airplane flying field and parking structures, if any. These shall include a drawing showing the location and orientation of the runway, overfly area, and safety zone on a map of St. Johns Landfill furnished by Metro. The size of the overfly area and safety zone shall be no smaller than that shown in the "AMA Recommended RC Flying Site Specifications" attached to the PAMAA application. The outer edge of the safety zone shall be no less than 250 feet from the motor blower flare station, compressor station, planned operation and maintenance building, and power line rights of way. The overfly zone shall not include landfill roads as shown on a map supplied by Metro.
2. Before placing materials, carrying out construction, or operating a radio controlled model airplane flying site at St. Johns Landfill, the Portland Area Model Aircraft Association (PAMAA) shall submit to Metro:
- A. The attached PAMAA/Metro Indemnification Agreement prepared by Metro and signed by an authorized PAMAA official.
- B. The attached personal Indemnity, Waiver and Release Agreement prepared by Metro and signed by each adult member currently expected to construct the flying field. If minors help construct the flying field, a personal Indemnity, Waiver and Release Agreement shall be signed by a parent of each member who is a minor.
- C. A signed agreement with Metro covering reimbursement to Metro of costs to it which are associated with construction. or operation.
3. Prior to operating model airplanes on St. Johns Landfill, PAMAA shall:
- A. Complete construction of improvements in accord with Metro's conditions of approval. Metro shall be notified in advance of all construction so that Metro may inspect it. To facilitate inspection and access control by the Metro Site Supervisor, construction shall take place between 8:00am and 3:30pm Monday through Friday.
- B. Obtain approval by Metro of an operations plan including, but not limited to days of operation, parking, health, safety, and site security rules and procedures for members.
4. Assuming all pre-operation conditions set forth above have been met, an application for development shall be submitted to the City of Portland Planning Bureau by PAMAA with Metro, the Smith and Bybee Lakes Trust Fund Manager, as co-applicant. The proposed development of the flying field and associated improvements must be then reviewed and approved by the City of Portland Planning Bureau. The City's procedural standard of review shall be determined by the Implementation Procedures set forth in the Natural Resources Management Plan for Smith and Bybee Lakes.

OPERATION CONDITIONS

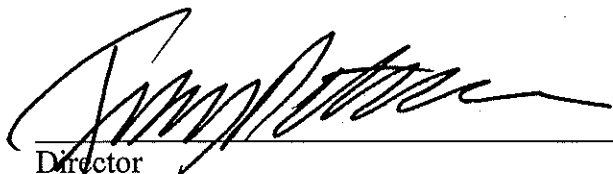
1. All structures shall be maintained in conformance to the conditions of Metro's approval under Pre-Operation Conditions above. Structures may not be modified without prior written approval by Metro.

2. No person shall be allowed to enter St. Johns Landfill until that person has submitted a signed and dated Indemnity, Waiver and Release Agreement, attached hereto. Agreements shall be signed by all adult PAMAA members and by a parent of each minor PAMAA member.
3. No minor shall be permitted to enter the St. Johns Landfill unless accompanied by an adult.
4. The Metro Site Supervisor may at any time order flying or fueling operations to cease for any period designated by the Metro Site Supervisor. This order may be communicated verbally to the PAMAA Site Supervisor or members or by means of a sign posted on the St. Johns Landfill gate. Conditions which may interrupt flight operations may include, but are not limited to, grass fire danger due to dry weather, construction, construction mobilization, mowing, or other landfill maintenance operation. Use and access will not be unreasonably denied.
5. The Metro Site Supervisor may at any time direct any person on St. Johns Landfill to show identification or to leave the landfill. Failure of a PAMAA member to promptly follow this direction is a violation of this permit, and shall result in expulsion from the St. Johns Landfill.
6. PAMAA members shall be limited to the sites designated on documents approved by Metro as the flying field, parking area, and the road between the flying field and the parking area. No PAMAA member shall drive or park any vehicle on the landfill cover, except during construction of the flying field. PAMAA members may briefly park on the road adjacent to the flying field during the time they are loading or unloading aircraft or equipment.
7. No PAMAA member shall cause a model airplane to fly outside of the Metro approved overfly area.
8. No PAMAA member shall give the access key, key card, or other access code to any non-PAMAA member or other unauthorized person.
9. No PAMAA member shall smoke on the St. Johns Landfill, bring any pet or other animal, alcoholic beverage, incendiary device, fireworks, or rockets onto St. Johns Landfill.
10. PAMAA members shall not use gasoline as aircraft fuel. Fueling shall be done in a restricted area over a dry sink. A fire extinguisher approved by Metro shall be present at the flying site at all times and shall be maintained according to the manufacturer's directions.
11. By operating a model airplane flying field under this permit, PAMAA agrees that it will expel and prevent from entering St. Johns Landfill any member who is observed by any member to violate any PAMAA rule, the conditions of its operations plan, or this permit. PAMAA may give a violator one warning before permanently expelling the violator from the St. Johns Landfill.
12. By operating a model airplane flying site under this permit, PAMAA agrees that it will eject and prevent from entering St. Johns Landfill any member if notified by the Director of the Regional Environmental Management Department or his/her designee that the person is in violation of the PAMAA operation plan, or any rule, ordinance, statute, or special use permit conditions.

13. Metro and PAMAA desire to work together to resolve current or potential future problems and conflicts. However, the director of the Regional Environmental Management Department may revoke this Special Use Permit if the director finds that PAMAA or its members have violated any rule, ordinance, or statute related to use of the model airplane flying site or violated the Metro approved PAMAA operations plan, or any Special Use Permit condition. Before revoking this Special Use Permit, the director shall notify the President of PAMAA of the pending revocation in writing. PAMAA shall thereafter be afforded 15 days from receipt of the notice in which to submit, in writing, a request that the Metro Chief Operations Officer reconsider the pending revocation. Absent a request for reconsideration, the pending revocation shall become final. Notice of Metro's pending revocation shall be sent to the President of PAMAA, or his or her designee. Notice of PAMAA's request for reconsideration under this provision shall be sent to the Metro Chief Operations Officer. Notice shall be deemed given and received upon personal service or deposit in the United States certified mail, postage prepaid, return receipt requested. Within 15 days after receipt of PAMAA's request for reconsideration, the Metro Chief Operations Officer shall issue a written response either reinstating this Special Use Permit (with or without additional conditions, at his/her sole discretion), or denying PAMAA's request for reconsideration and confirming the revocation of this Special Use Permit.
14. PAMAA shall effectively inform each member of the rules and regulations in its approved operations plan, and these operation conditions.
15. If PAMAA proposes that Metro construct or pay for construction of an automatic gate, wellhead protection, parking, or other improvements, PAMAA shall reimburse Metro for the cost of these improvements including 50% of the cost of an automatic gate. PAMAA may reimburse Metro for the cost these improvements plus appropriate interest over time from user fees collected by PAMAA. No cost of these improvements including 50% of the cost of an automatic gate. PAMAA may reimburse Metro for the cost these improvements plus appropriate interest over time from user fees collected by PAMAA. No less than 50% of user fees collected each year shall be remitted to Metro based on the terms of an agreement negotiated with Metro.

This permit shall be in force for one (1) year after the date of approval shown below. At that time it may be renewed, modified, or revoked at the discretion of Metro.

Approved By:



Director
Regional Environmental Management Dept.

1/19/00

Date

PAMAA / METRO INSURANCE & INDEMNIFICATION AGREEMENT

In consideration for Metro's grant of a Special Use Permit for a Model Airplane Flying Field on the St. Johns Landfill (hereafter, "Special Use Permit"), the Portland Area Model Aircraft Association ("PAMAA") hereby agrees to assume and accept responsibility for all risks, personal injury, and/or damage to property, including claims related to hazardous substances and other environmental matters, relating to or arising out of the construction and use of the St. Johns Landfill Model Airplane Flying Field, as set forth below.

1. Waiver. PAMAA agrees to waive all claims, including claims arising out of personal injury or death to its officers and members and/or damage to property, against Metro, its individual Metro employees and officers, project coordinators, representatives, agents and contractors (hereafter, "Metro Personnel"), arising from or relating to the construction and use of the St. Johns Landfill Model Airplane Flying Field. PAMAA agrees that this waiver shall act as a complete bar to all actions or claims by PAMAA arising from or related to construction from use of the St. Johns Landfill Model Airplane Flying Field, and that if any action is commenced or claim is made, this waiver shall warrant immediate and final dismissal of all such actions or claims.
2. General Indemnity. PAMAA agrees to defend (using legal counsel reasonably acceptable to Metro), indemnify, and hold harmless Metro, and Metro Personnel from and against any and all actual or alleged claims, damages (including diminution of value), personal injuries and expenses, costs, fees (including, but not limited to, attorney, accountant, paralegal, expert, and escrow fees), fines, and/or penalties (collectively "Costs") which may be imposed upon or claimed against Metro and/or Metro Personnel, and which, in whole or in part, directly or indirectly, arise from or are in any way connected with: (i) the acts, failure to act or negligence of PAMAA officers, members, representatives or agents relating to or arising out of the Special Use Permit; (ii) any condition created on the St. Johns Landfill by any party, that results in accident, personal injury or property damage to PAMAA members and their families; and (iii) any condition created on the St. Johns Landfill by PAMAA, its officers, members, agents or contractors that results in accident, personal injury or death to Metro Personnel. This indemnification shall be effective whether or not the precipitatory conditions set forth in (i)-(iii) above resulted from an act or failure to act in accordance with PAMAA rules.
3. Environmental Indemnity. PAMAA agrees that, with the exception of automobile and model airplane fuels, no PAMAA officer, member or representative shall use, generate, transport, treat, store, or otherwise handle Hazardous Substances (as the term is defined in ORS 465.200) on the St. Johns Landfill, and related Metro property. In addition to all other indemnities set forth above and provided by law, PAMAA agrees that it shall be solely responsible for and agrees to defend (using legal counsel reasonably acceptable to Metro), indemnify and hold harmless Metro, its individual Metro employees and officers, projects coordinators, representatives, agents and contractors from and against all environmental damages and costs suffered by, including incidental and consequential damages claimed against or assessed against Metro arising, in whole or in part, directly or indirectly, from the acts, failure to act or negligence of PAMAA, its officers, agents and individual members occurring on the St. Johns Landfill and related Metro property. PAMAA further agrees to reimburse Metro for damages and cleanup costs due to any pollutant release, Hazardous Substance release (as those terms are defined in ORS 465.200), or violation of federal, state and local environmental law and regulation that arises, in whole or part, directly or indirectly, from the acts, failures to act or negligence of PAMAA, its officers, agents and individual members occurring on the St. Johns Landfill and related Metro property. The indemnification set forth above shall be effective whether or not the precipitatory act, failure to act, or negligence was in accordance with PAMAA rules. PAMAA agrees that if a pollutant release, hazardous

substance release, or violation of federal, state, or local environmental law or regulation is caused by vandalism, and PAMAA, its officers, agents and/or its individual members are not, at the time of such vandalism, in compliance with the Metro's Special Use Permit rules for key cards/codes, then PAMAA shall be liable for damages and cleanup costs resulting from said vandalism, as described above.

4. Insurance. PAMAA agrees to provide Metro with a certificate of insurance, satisfactory to Metro in its sole discretion, specifically naming Metro as an additional insured under its broad form general commercial liability insurance policy (hereafter, "Policy"). PAMAA also agrees to submit to Metro evidence acceptable to Metro in its sole satisfaction, proving that PAMAA or the Academy of Model Aeronautics is willing and able to fund claims up to \$250,000.00 (the policy's "retained limit"). PAMAA further agrees to purchase an endorsement to its broad form commercial general liability coverage increasing its Fire Damage Limit to \$100,000.00.

PORTLAND AREA MODEL AIRCRAFT ASSOCIATION

By:

Date Name:

Its:

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**Metropolitan Services District ("Metro")
Regional Environmental Management Department
St. Johns Landfill Model Airplane Flying Field
Indemnity, Waiver and Release**

Warning Information

The St. Johns Landfill Model Airplane Flying Field ("Flying Field") has been developed on top of the decommissioned St. Johns Landfill. It is important that model airplane enthusiasts seeking to use the model airplane flying field understand that there are certain risks to health, safety, and the environment at the St. Johns Landfill. Landfill gas is composed of 50% methane (a flammable, explosive gas) and other gases, most of which are toxic. Small amounts of landfill gas may leak into the air at well heads, the cover edge, etc. Leaking landfill gas has caused people to become ill. Underground fires have occurred and these fires, with an accompanying sudden cave-in and/or hazardous air emissions, may occur in the future.

There is a risk to health, safety, and the environment if the gas collection system is shut down for more than a day. The gas collection system is designed to shut down to prevent an explosion or other safety risk if there is damage to certain components by impact, tampering, vandalism, or by a fire such as a grass fire.

Also, there is a risk that the multi-layer cover cap may be damaged due to erosion, puncturing of the membrane, or differential settlement.

Access to the landfill and activity on the landfill is severely restricted to reduce these risks. The requirements listed below are designed to reduce these risks.

Rules of Access

1. No person shall be allowed to enter St. Johns Landfill until Metro has received a signed original of this Indemnity, Waiver and Release Agreement ("Agreement"). Agreements shall be signed by all adult Portland Area Model Aircraft Association ("PAMAA") members seeking to enter the St. Johns Landfill. Agreements shall be also signed by a parent of each minor seeking to enter into the St. Johns Landfill. Access under this Agreement shall be limited to the Metro approved Flying Field, and the road between the gate and the Flying Field.
2. No PAMAA member shall cause a model airplane to fly outside of the Metro approved overfly area.
3. No PAMAA member shall bring any pet, animal or alcoholic beverage onto St. Johns Landfill.
4. No PAMAA member shall use gasoline as aircraft fuel. Fueling shall be done in a restricted area over a dry sink. A fire extinguisher approved by Metro shall be present at the Flying Field at all times and shall be maintained according to the manufacturer's directions.
5. No PAMAA member or person accompanying a member shall smoke or bring any smoking materials or other incendiary device, including fireworks or rockets, onto the St. Johns Landfill.
6. No PAMAA member shall give the access key, key card, or other access code to any person not authorized to enter the St. Johns Landfill.
7. The Metro Site Supervisor may at any time order flying or fueling operations to cease for any period designated by the Metro Site Supervisor. This order may be communicated verbally to the PAMAA Site Supervisor or members or by means of a sign posted on the St. Johns Landfill gate. Conditions which may interrupt flight operations may include, but are not limited to, grass fire danger due to dry weather, construction, construction mobilization, mowing, or other landfill maintenance or operations.

8. The Metro Site Supervisor may at any time direct any person on the St. Johns Landfill to show identification or leave the landfill. Failure of a PAMAA member to promptly follow this direction is a violation of this permit, and shall be grounds for expulsion.
9. No one under 18 years of age shall be allowed at the St. Johns Landfill, unless accompanied by a parent or other adult.

Insurance Information

As a voluntary visitor to the St. Johns Landfill, you are not covered by Metro's general liability fund or workers' compensation insurance.

Indemnity, Waiver and Release

(Please read carefully before signing.)

1. I hereby acknowledge that I have read carefully the Information and Rules of Access set forth above, including the Insurance information, and agree to all the terms, provisions and rules therein.
2. I understand all the risks associated with entry into and use of the St. Johns Landfill Model Airplane Flying Field. I hereby agree to assume and accept responsibility for all risks, injury, death, and/or damage to property, including claims related to hazardous substances and other environmental matters, relating to or arising out of my visit to and the use of the St. Johns Landfill Model Airplane Flying Field.
3. I certify that I am a current member of PAMAA.
4. I agree that I will hold harmless Metro, its individual employees and officers, project coordinators, representatives, agents, and contractors, against all claims arising from or related to my visit to and use of the St. Johns Landfill Model Airplane Flying Field.
5. I agree to waive all claims, including claims due to injury, death and/or damage against Metro, its individual Metro employees and officers, project coordinators, representatives, agents and contractors arising from or relating to my visit to and use of the St. Johns Landfill Model Airplane Flying Field.
6. I agree that this waiver shall act as a complete bar against all actions or claims arising from or related to my visit to and use of the St. Johns Landfill Model Airplane Flying Field, and that if any action is commenced or claim is made, this waiver shall warrant immediate and final dismissal or all such actions or claims, and that this waiver applies to all claims made by myself or by my legal heirs, representatives, or agents.
7. General Indemnity. I agree to defend (using legal counsel reasonably acceptable to Metro), indemnify, and hold harmless Metro, its individual Metro employees and officers, project coordinators, representatives, agents and contractors from and against any and all actual or alleged claims, damages, expenses, costs, fees (including, but not limited to, attorney, accountant, paralegal, expert, and escrow fees), fines, and/or penalties (collectively "Costs") which may be imposed upon or claimed against Metro and which, in whole or in part, directly or indirectly, arise from or are in any way connected with: (i) my acts, failure to act or negligence; (ii) my use, of the St. Johns Landfill, whether or not due to my own act or omission; (iii) any condition created on the Property by any party, other than Metro or an agent of Metro, including any accident, injury or damage hereafter; and/or (iv) any breach, violation or nonperformance of my obligations under the rules set forth above.
8. Environmental Indemnity. In addition to all other indemnities provided above or by law, I agree that I shall be solely responsible for and agree to defend (using legal counsel reasonably acceptable to Metro), indemnify and hold harmless Metro, its individual Metro

employees and officers, project coordinators, representatives, agents and contractors from and against all environmental damages and costs claimed against or assessed against Metro arising, in whole or in part, directly or indirectly, from my acts or omissions on or about the St. Johns Landfill hereafter. I agree to reimburse Metro for damages and cleanup costs due to any pollutant release, hazardous substance release (as that term is defined in ORS 465.200), or violation of federal, state and local environmental law and regulation that arises, in whole or part, directly or indirectly, from my acts or omissions, on the St. Johns Landfill. If such pollutant release, hazardous substance release, or violation was caused by vandalism and I was not, at the time of such vandalism, in compliance with the rules for key cards/codes as set forth above, then I agree to also be liable for damages and cleanup costs, as described above. This Environmental Indemnity is in addition to, and not in lieu of, the general indemnity provision set forth above.

Signature of Adult PAMAA Member or
Parent of Minor PAMAA Member

Date

Please print:

Last Name, First Name, MI

Phone: _____

Address, City, State, Zip Code

Minor's Name (If Any)

Phone: _____

Minor's Address, City, State, Zip Code

RECOMMENDED WATER MANAGEMENT OPTION

In accordance with the management goal for the Smith and Bybee Lakes area, which is **“to maintain and enhance the lakes (area) in a manner that is faithful to their original natural condition”**, the water management option recommended is Option III discussed above. This preferred option includes:

1. Remove the existing dam and control structure;
2. Construct an open structure that will allow unrestricted flow between the lakes and the Columbia Slough and Willamette River while maintaining the ability to retain water in the lakes; and,
3. Develop the ability to augment water to the lakes by pumping from another source. *portable pump w/tractor*

Additional information is needed to refine the cost estimates for developing the ability to pump water from the Columbia River or groundwater aquifer to the lakes on a limited basis.

The environmental impacts of placing a weir structure separating the western arm of Bybee Lake and connecting the lakes directly to the Columbia slough will be evaluated. Additional data will be gathered for estimating cost of constructing this option.



January 3, 2000

Bill Fujii
Water Resources Department
Commerce Building
158 12th Street NE
Salem, OR 97310-0210

Subject: Water Management and Conservation Plan

Dear Bill:

Enclosed is a copy of the Water Management and Conservation Plan submitted as part of the requirements of the Permit 51547 held by the Port of Portland. This plan was developed to cover all of the known water rights held by the Port of Portland and serves as a long term water supply plan and preliminary conservation and curtailment plan for the non-potable water systems existing and planned by the Port.

Due to the uncertainties related to Smith and Bybee Lakes environmental enhancement right within Permit 51547/51548, we have not included any detailed plans for this use in the Water Management and Conservation Plan. We will work with the interested parties associated with this use to achieve a final decision on the planned use of this portion of the water right. Once this has been resolved, we will submit under a separate report the enhancement plan.

If you have any questions or comments during the course of your review of the Water Management and Conservation Plan, please do not hesitate to call me at (503) 944-7532.

Sincerely, =

Gerry Meyer
Development Manager

Cc: Jeff Barry / CH2M HILL
Jeff Nuss / Greenwood Resources
Tom Fuller / Shiels Oblatz Johnsen

Report

Port of Portland Water Management and Conservation Plan

Prepared for
**The State of Oregon
Oregon Water Resources Department**

December 1999

Prepared by
CH2MHILL

Executive Summary

Introduction

In cooperation with the City of Portland Bureau of Water Works, the Port of Portland (Port) has evaluated its operations and those of its tenants to identify opportunities to minimize use of potable water from the City's Bull Run system. The Port's primary water management and conservation strategy will be to serve nonpotable water demands with alternative water sources such as groundwater wells and nearby surface waters.

Water Supply

Based on a review of its existing array of water rights, the Port applied for additional water rights to serve current and future nonpotable water demands. The Port's usage is generally categorized as municipal. The water rights listed in Table ES-1 were permitted by the Oregon Department of Water Resources to support the Port's nonpotable water system development.

TABLE ES-1
Summary List of Key Port of Portland Water Rights

Permit No.	Priority Date	Source	Rate (cfs)	Service Area
S-50680 ^a	6/22/1988	Columbia River	2.08	Government Island
G-10967 ^b	12/28/1989	Groundwater	0.22	Portland International Center
S-51547 ^c	11/18/1992	Willamette River	21.76	Rivergate Industrial District Swan Island Industrial Park Terminal 4
✓ S-51548 ^c	11/18/1992	Columbia River	51.04	Rivergate Industrial District (9.57 cfs) Portland International Center and Portland International Airport (5.836 cfs) Smith and Bybee Lakes (35.63 cfs) ^d
G-13093 ^e	7/9/1996	Groundwater	23.53	Rivergate Industrial District
G-13387 ^c	4/2/1997	Groundwater	2.9	Portland International Center Portland International Airport

^aIrrigation use.

^bIrrigation and lake maintenance.

^cMunicipal use.

^dEnvironmental enhancement.

^eThis can be used instead of S-51547 and S51548 for nonpotable uses in the Rivergate area, but not in addition to them.

Water Demand

The water demands of the Port and its tenants are primarily nonpotable, such as landscape irrigation and a variety of industrial uses including washdown activities, cooling, construction water, and production activities.

Rivergate Industrial District

✓ Rivergate is a development of approximately 2,150 acres and is zoned for a full range of industrial uses such as distribution, manufacturing, food processing, and marine terminals. Currently, most of the potable and nonpotable demands are being served by the City's Bull Run system. In addition to the nonpotable water demands for the Rivergate tenants, an environmental enhancement demand for Smith and Bybee Lakes and other natural areas may be a potential use within this area. ✓

Portland International Center and Portland International Airport

The Port is aggressively marketing the Portland International Center (PIC) and the Portland International Airport (PDX). In addition to the Cascade Station development, PIC tenants are primarily office and distribution. The major nonpotable water uses would be landscape irrigation, vehicle washdown, cooling systems, facility washdown, and construction. The major uses at PDX would be landscape irrigation and construction.

Swan Island Industrial Park and Terminal 4

The ship repair yard is the most significant nonpotable water user at Swan Island Industrial Park. It uses water for boilers, washdown activities, construction activities, dust control, and ship ballast. Nonpotable water uses at Terminal 4 would be for washing down facilities and vehicles.

Government Island

At present, 166.5 acres of pasture land are irrigated on the island. Future plans for this area may involve development of additional natural area enhancement and passive recreational facilities. Water would then be needed for landscape irrigation and fire control.

Existing and Planned Nonpotable Water System Infrastructure

The Port's nonpotable water system development plans are summarized in Table ES-2, which also briefly describes existing nonpotable systems.

Conservation Measures and Curtailment Plan

In addition to removing nonpotable demands from the drinking water system and developing separate sources for these uses, the Port is considering the implementation of several key conservation measures with regard to landscaping and industrial uses. This will be done to ensure the best management and use of water resources. The Port will work with the City of Portland Bureau of Water Works to develop a plan that addresses the City's Business, Industry, and Government (BIG) conservation program.

TABLE ES-2
Nonpotable Water System Development Plans

Service Area	Infrastructure Development Plans
Rivergate Industrial District	<p>Currently. No existing infrastructure.</p> <p>Phase 1—Pilot Development. Two submersible pumps will be installed in Well No. 1 to serve three key tenants. Peak flow 390 gpm and annual volume 57 million gallons. Predesign has been completed.</p> <p>Phase 2—North Marine Drive and North Pacific Gateway Extension Development. Pipeline will be extended from Land O'Lakes to North Lombard Street and north to the Columbia Slough crossing. Using an existing pipe crossing the slough, the pipeline will be installed along North Marine Drive and down North Pacific Gateway to the future Multnomah County Correctional Facility, which is currently being designed. Additional wells and/or development of the storage reservoir and booster pump station will be constructed as needed to meet demand.</p> <p>Development Driven Phases. Construction of other pipelines and well system will be driven by development of the properties and demand for the service.</p>
Portland International Airport and Portland International Center	<p>Currently. Irrigation with PIC's Phase I developments is being supplied by a well and distribution pipeline that serves approximately 32.9 acres. PDX Airport Way irrigation and construction activity is supplied by a well and distribution pipeline.</p> <p>Potential Expansion. Currently, plans are being developed to expand the nonpotable water system in order to serve development within PIC related to the extension of the light rail to the airport. Additional nonpotable demands will be explored as part of the overall predesign of the nonpotable water system in this area. As demand grows in this area beyond the capacity of the existing well, the water supply will be supplemented by the Columbia River surface water right.</p>
Swan Island Industrial Park and Terminal 4	<p>Currently. Nonpotable water system at the ship repair yard has been designed and constructed. The system consists of a river intake structure, pump station, distribution line, and service stations along the berths at the yard.</p> <p>Future Plans. No plans to expand systems. Could change if demand grows at Swan Island.</p>
Government Island	<p>Currently. Intake structure, pump station, and distribution mainline to solid-set irrigation system. Addition of fish intake screen system being evaluated.</p> <p>Future Plans. None at this time. Potential natural area improvements and recreational facilities may be evaluated.</p>

Overall Development Schedule

The Port will develop predesign and/or development plans in the next 2 to 3 years for the service areas under its jurisdiction. Design and construction will be implemented in phases as justified by the demand for this water. Realistically, it is not likely that full development of each phase of each service area and use of the water rights obtained by the Port will be complete for at least 20 to 30 years. Therefore, the Port has applied for a time extension that would allow 30 years to develop full use of the water.

Water Supply

The water supply for the Port of Portland (Port) is directly related to the water rights held by the Port. A detailed review of the water rights information available at the Oregon Water Resources Department (OWRD) was performed by the Port to determine the overall water supply based on the water rights. Table 2-1 provides a summary of the water rights identified during the detailed review effort. Figure 2-1 provides a graphical representation of the key water rights.

Historically, the Port has obtained the majority of its water from the City of Portland Water Bureau and other regional water suppliers. In 1992, the Port of Portland, in conjunction with the City of Portland, started to examine ways to reduce the Port's demand for water from the Bull Run system and minimize water supply costs to Port tenants by finding other sources to supply water for some of their nonpotable uses. The Port filed a surface water right application, and the Oregon Department of Water Resources issued two permits with a priority date of November 18, 1992, as follows:

- **Permit No. S-51547.** Willamette River water can be withdrawn for nonpotable uses at the Rivergate Industrial District, Swan Island Industrial Park, and Terminal 4. The allotted rate is 21.76 cubic feet per second (cfs).
- **Permit No. S-51548.** Columbia River water can be withdrawn for nonpotable uses at the Rivergate Industrial District, Portland International Airport, and Portland International Center. The allotted rate for this use is 15.41 cfs. The permit also includes an allotted rate of 35.63 cfs for environmental enhancement of the Smith and Bybee Lakes in the area of the Rivergate Industrial District.

Table 2-2 provides a summary of the Port's permitted surface water rights on the Columbia and Willamette Rivers.

While preliminary design of the Rivergate Industrial District nonpotable water system was being updated, a potentially large water-use tenant expressed interest in the system and approached the Port of Portland about exploring a groundwater source for the system. Because of the nature of its business, the potential tenant required a groundwater source for nonpotable water. In order to address this issue, the Port and the potential tenant performed a test well program to determine if the water quantities and quality required for the tenant and/or the Port's nonpotable water system could be achieved from wells in this area. Based on the positive results of the test, the Port filed a groundwater right permit application for the same water use identified in the original surface water right permit for the Rivergate area. The groundwater right permit was approved (Permit No. G-13093; priority date: July 9, 1996) with a condition that recognized the connection between these two permits. These permits allow the Port to deliver nonpotable water to users within this area through either a groundwater system or a surface system, or through both kinds of systems. The total water use, however, cannot exceed the permitted amount for the area. Therefore, under this approach, the amount of water delivered through a groundwater system reduces the amount that can be delivered through a surface water system, and vice versa.

In the past, the Port has obtained groundwater, surface water, and storage rights at various locations. The earliest was a groundwater right for a domestic well that served the old clubhouse at the Columbia Edge Country Club. This right has not been used for several years. The Port, therefore, intends to cancel and abandon it. Because the Port owns land within the Multnomah County Drainage District (MCDD), it owns a portion of MCDD's water right. This right continues to be used under the

✓ operations of the drainage district. The Port also owns a portion of Government Island and surface water rights to irrigate 166.5 acres. The surface water right has a pending proof certificate once the Port submits proof of installation of fish screens on the intake pumps. The Port also has interests in water storage rights for Smith and Bybee Lakes because ownership of the lakes within Rivergate Industrial District. In addition, the Port secured groundwater rights (Permit No. G-10967) to irrigate landscaping and to provide lake maintenance in the Portland International Center (PIC) area. It also secured groundwater rights (Permit No. G-13387) to irrigate Airport Way landscaping and provide construction water for the airport. (Previously, Permit No. G-10343 was issued for this purpose, but it has since been cancelled.) ✓

Table 2-1

Summary of Port of Portland Water Rights

User ID	Location	Application No.	Permit No.	Certification No.	Source	Priority Date	Rate	Type of Use	Area (acres)	Proof Survey
POP1514	Swan Island, T-4, RGID	72998	S-51547		Willamette	11/18/92	21.76 cfs	Municipal	NA	
POP1514	PDX, PIC, RGID	72998	S-51548		Columbia	11/18/92	15.41 cfs	Municipal	NA	
POP1514	Environmental enhancement	72998	S-51548 ^a		Columbia	11/18/92	35.63 cfs	Municipal	NA	
POP1514	RGID	14341	G-13093 ^b		Wells 1-6	7/9/96	23.53 cfs	Municipal	NA	
POP1514	PDX/PIC	14488	G-13387		Well	4/2/97	2.9 cfs	Municipal	NA	
POP1514	PIC	12005	G-10967		Well	12/28/89	0.22 cfs	Irrigation/lake maintenance	32.9	
POP1514	Government Island	69646	S-50680	Pending	Columbia	6/22/88	2.08 cfs	Irrigation	166.5	12/16/92
POP1514	PDX/PIC	11056	G-10343		Well	Cancelled				
ODFW	Smith and Bybee Lakes	62601	R-8298	Pending	Columbia Slough	9/8/81	3100 AF	Water storage	NA	8/18/93
ODFW	Smith and Bybee Lakes	62602	R-45914	Pending	Columbia Slough	9/8/81	3100 AF	Water storage	NA	8/18/93
MCDD	PDX/PIC	18081	14393	48633	Well	NA	NA	NA	NA	
Col Edge CC	Clubhouse	5152	G-4884	41882	Well	4/8/70	0.03 cfs	Domestic	NA	4/30/73

^aSeparate rate under same permit allotted for environmental enhancement at Smith and Bybee Lakes in the RGID area.^bThis groundwater right can be used instead of the surface water rights S-51547 and S-51548 for nonpotable uses in the RGID area, but not in addition to them.

AF = acre-feet

cfs = cubic feet per second

NA = Not applicable

PDX = Portland International Airport

PIC = Portland International Center

RGID = Rivergate Industrial District

Table 2-2

Summary of Surface Water Rates Requested for Port of Portland Water Use

		Industrial Demands			Landscape Irrigation			Totals Demands	
Description	Type of Use	Peak Rate (cfs)	Peak Rate (gpm)	Season	Peak Rate (cfs)	Peak Rate (gpm)	Season	Peak Rate (cfs)	Peak Rate (gpm)
Willamette River (Permit No. S-51547)									
Swan Island Industrial Park Diversion 1A or 1B	Municipal	6.682	3000	Jan-Dec			NA	6.682	3000
Terminal No. 4 Diversion 2A or 2B	Municipal	1.114	500	Jan-Dec			NA	1.114	500
Rivergate Industrial District Diversion No. 3	Municipal	13.96	6270	Jan-Dec			NA	13.96	6270
Columbia River (Permit No. S-51548)									
PDX & PIC Diversion No. 1 or 2	Municipal	3.01	1350	Jan-Dec	2.826	1268	Mar-Oct	5.836	2618
Rivergate Industrial District Diversion No. 3	Municipal	7.33	3370	Jan-Dec	2.243	1007	Mar-Oct	9.573	4377
Environmental Enhancement (Permit No. S-51548)									
Columbia River Diversion No. 3		35.63	16000	Jan-Dec				35.63	16000
Summary									
Willamette River		21.756	9770	Jan-Dec	0	0	NA	21.756	9770
Columbia River		10.34	4720	Jan-Dec	5.069	2275	Mar-Oct	15.409	6995
Environmental - Columbia		35.63	16000	Jan-Dec	0	0	NA	35.63	16000

SECTION 3

Water Demand

The water demands of the Port and its tenants are primarily nonpotable. They use the water for irrigation of landscaping and growing crops, and a variety of industrial uses. Industrial uses include, for example, washdown activities, cooling, construction water, and production activities. The existing and future nonpotable water demands of the Port are reviewed in this section for the following areas:

- Rivergate Industrial District
- Portland International Center (PIC) and Portland International Airport (PDX)
- Swan Island Industrial Park (Ship Repair Yard) and Terminal 4 (T-4)
- Government Island

Rivergate Industrial District

Rivergate Industrial District (Rivergate) is located at the confluence of the Willamette and Columbia Rivers. The Willamette River is its western border, and the Columbia River is its northern border. Rivergate has a master-planned development of approximately 2,150 acres and is zoned for a full range of industrial uses such as distribution, manufacturing, food processing, and marine terminals. Currently, most of the potable and nonpotable demands are being served by the City of Portland's drinking water source (Bull Run system). Preliminary design for the nonpotable water system in this area has been completed, and the designs and construction activities for Phase 1 of the system are currently being planned within the next 2 to 3 years.

Two main types of nonpotable water demands exist within Rivergate: irrigation and industrial uses. Irrigation demands consist of landscape irrigation maintained by the Port along the City-owned rights-of-way and tenant-leased or owned properties. Industrial and marine terminal demands consist of, but are not limited to, product washdown activities, process use, construction activities, process cooling, and vehicle washing.

The nonpotable water demands in the Rivergate area were developed using the following methodology:

- Based on development plans, the non-potable water demands were categorized as existing or future. They were also grouped into five user types: distribution, manufacturing, marine terminals, processing, and right-of-way irrigation. Figures 3-1 and 3-2 show land use and nonpotable system development plans for Rivergate, respectively.
- Using meter information available from the City of Portland Bureau of Water Works, the total potable water use was summarized for most of the existing tenants. The low and high meter values (outliers) were dropped from the data set for calculation of average usage. This was done to ensure the average was representative and not distorted by exceptional extremes. The resultant average is referred to as the selected meter average.

- The potable-water-usage data were used to estimate the probable existing nonpotable water usage for current tenants. For this purpose, it was assumed that nonpotable usage would equal 50 percent of potable usage. This percentage was developed from questionnaires collected during the predesign work in 1992. For those existing tenants without meter data, it was assumed that nonpotable usage would equal 50 percent of the average of the selected metered tenants by type of user group.
- The nonpotable demands for future tenants were estimated to equal 80 percent of the average of the selected-metered total potable water use for the user type based on existing data. The percentage of nonpotable usage for future users was increased to 80 percent because it was assumed that future users will be more likely to plan their facilities for the use of nonpotable water.
- A peak design rate for the existing and future tenants was estimated by multiplying the average daily rate in gallons per minute (gpm) by a peaking factor of 2.2. The peaking factor of 2.2 was assumed to address the seasonal peak for irrigation use of 6 out of 12 months ($12/6 = 2$) and weekly peak of 6 out of 7 days of operation ($7/6 = 1.1$) for both industrial and landscape demands.
- The right-of-way landscape irrigation demands were calculated using estimated irrigated area and annual plant water use of 36 inches per acre. Because this represents an annual water volume, the average daily demand in gallons per day (gpd) was estimated by dividing the annual volume by the annual application period (180 days). The peak design rate (gpm) for the right-of-way irrigation demands was estimated by multiplying the average daily demand by a peaking factor of 3.3. The peaking factor of 3.3 was assumed to account for the weekly peak of 6 out of 7 days and daily peak of 8 out of 24 hours. The average daily nonpotable rate was assumed to be the same as the peak design rate because irrigation systems are designed for a specific rate and operation times are adjusted to achieve a specific amount of water delivered within a week.

The existing meter information for current potable water usage by existing tenants is summarized in Table 3-1 along with estimates for existing nonpotable demands. Using the methodology outlined above, the average daily and peak design rates were estimated from the daily average nonpotable demands. Table 3-2 shows the average daily and peak design rates estimated for each existing tenant and summarizes the rates by user type. These estimates were refined for Alcatel, Cintas, Oregon Steel Mills, Granpac, and Land O'Lakes based on meetings held with those companies to discuss their systems. Specific details of the refinements are noted in the tables.

The average daily and peak design rates for future tenants are shown in Table 3-3. From the original work performed during the preliminary design work, a few of the locations classified for future tenants have been developed and currently have existing tenants. Tenant names are given to these locations to reflect potential existing users even though they may still be listed in the tables for future tenants and users.

✓ In addition to the nonpotable water demands for the Rivergate tenants, an environmental enhancement demand for Smith and Bybee Lakes may be a potential use within this area. The surface water right includes this type of use and assumes the diversion would be along ✓

the Columbia River. This demand would be used to augment water supply to the lakes if desired and/or needed by Metro, which manages the lakes.

The projected peak and average nonpotable water demand rates for the Rivergate tenants are summarized in Table 3-4. The Port's surface water and groundwater right for this area consists of 6,270 gpm on the Willamette River side, 3,370 gpm on the Columbia River side, and 16,000 gpm for environmental enhancement.

TABLE 3-4
Summary of Peak Design Rates for Rivergate Nonpotable Water System

	Average Daily Flow Rates (gpm)	Peak Design Rates (gpm)
Existing Tenants	673	1,091
Future Tenants	2,925	3,706
Total	3,598	4,797

Portland International Center and Portland International Airport

Portland International Center (PIC) and Portland International Airport (PDX) are located along the Columbia River northeast of the City of Portland. The PIC and PDX are well positioned for growth, and the Port is aggressively marketing these areas. PIC has completed Phase I development. Continued expansion of this center is being implemented with the extension of the light-rail system to the airport and the CascadeStation development. PDX is currently in the middle of an expansion, and plans are underway for continuing into the next phase of development.

A planning level analysis for demand in these two areas was performed during the work associated with the surface water right (Permit No. S-51548). Because the tenants within PIC are projected to be primarily office and distribution, with some manufacturing the primary demand within PIC was determined to be landscape irrigation, vehicle washdown, cooling systems, facility washdown, and construction activity. The nonpotable water demand for PDX was determined to be primarily landscape irrigation and construction water needs. Based on the work performed in the water right application process, an estimate for the nonpotable water demand for these two areas was developed. Tables 3-5 and 3-6 provide a summary of the nonpotable demands for these two areas. Refinements to the projected demand have not been made, but will be part of the preliminary design work once the overall infrastructure development of the nonpotable water system in these areas is initiated.

Currently, two groundwater rights within these two areas are providing nonpotable supply to landscape irrigation within PIC and along Airport Way in addition to construction water for the airport expansion work. The landscape irrigation within PIC's Phase I developments is being supplied by Permit G-10967. The well is anticipated to have problems meeting future irrigation demand. Therefore, the Port has included this demand in the surface water right. Airport Way irrigation and construction activity demand is being supplied by Permit G-13387. These demands will continue to be served by this water right. In addition, the groundwater right has the ability to serve additional nonpotable demands within the area.

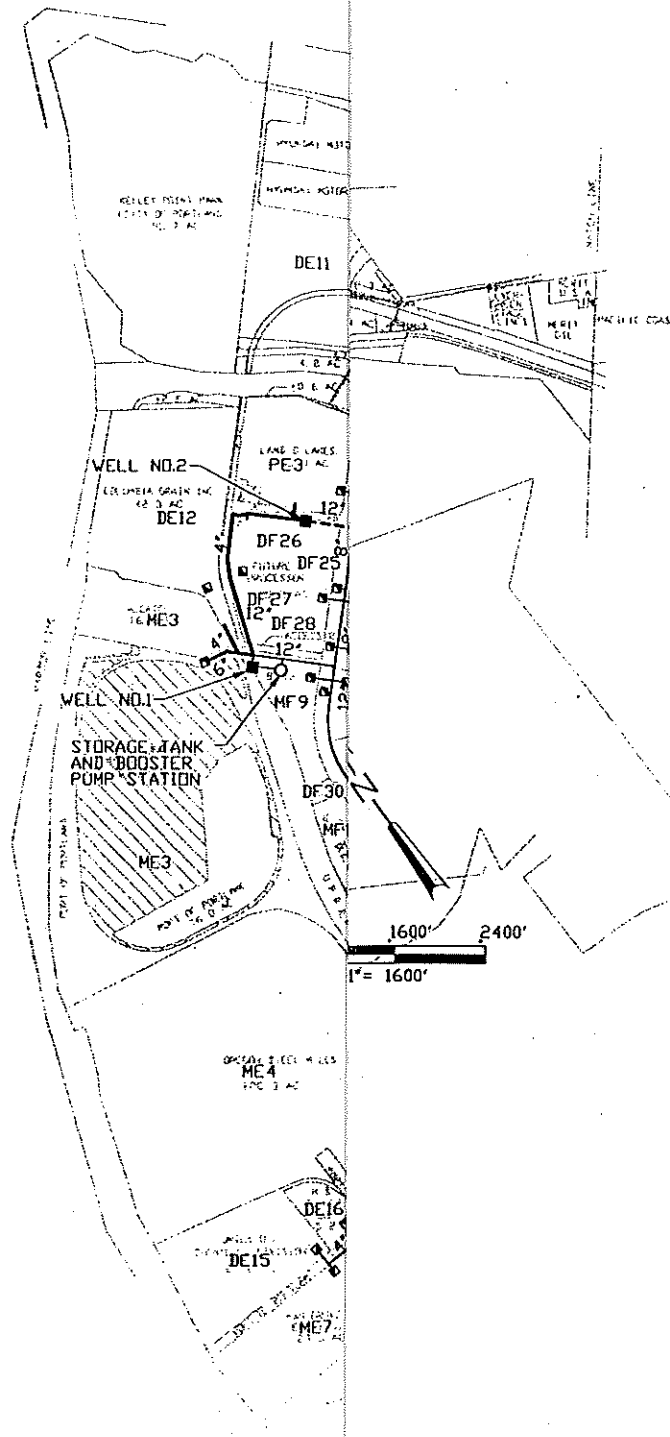


Figure 3-2
DEVELOPMENT PLAN
RIVERGATE INDUSTRIAL DISTRICT
NONPOTABLE WATER SYSTEM
PORT OF PORTLAND
PORTLAND, OREGON

