



**The Oregon Chapter of the
American Meteorological Society**

“Great Flood of 1996 30th Anniversary”

February 1996 Remembering Another Moment in OMSI History

Famous Floods

"Nature is blamed for failings that are Man's, and well-run rivers have to change their plans."
— Sir Alan P. Herbert, "Water"

Floods are part of the river's natural cycle. Floods create and maintain the river valley by depositing the rich, level soil on which we like to farm and build. Despite millennia of experience with floods, humans still optimistically choose to live in floodplains.



Flood of 1894
Oregon Historical Society, OHS 1894-1

The Great Flood of 1894
Before floodwaters were hemmed in by the seawall and held back by dams on the Columbia and Willamette, Portland saw some really spectacular floods. In June of 1894 heavy snowmelt swelled the Columbia River and overflowed into the lower Willamette, swamping the center of the city. At its peak the flood reached 33 feet and covered 300 city blocks.

"Softly, silently, the waters crept up, inch by inch, giving ample time for the removal of goods and other precautionary measures, and then gradually receded. There was no raging of waters, no sweeping of destructive currents, nothing but a gradual submersion."

— *The Flood of 1894, Portland, Oregon*



Flood and OMSI, 1894
Oregon Historical Society, OHS 1894



Rescue from a flood, Vanport Flood, May 30, 1948
Oregon Historical Society, OHS 1948-18

The 1948 Vanport Flood

The winter of 1948 was unusually long, with snowfall well into the spring. In May a warm front melted the snowpack in the mountains that feed the Columbia River. The seawall protected downtown Portland, but in Vanport, now the site of Delta Park, only the Smith Lake dike stood between thousands of homes and the Columbia River.

Vanport was built on the Columbia River floodplain in 1942 in response to a critical shortage of housing for wartime shipyard workers. Many of its residents were African American; it was one of the few places in Portland where housing was open to people of color. On Sunday, May 30, the rising Columbia River broke through the dike and flooded Vanport under 12 feet of water.

Vanport was not rebuilt, little official help was offered to its victims, and many African Americans struggled to find housing elsewhere in the city.



Floodwaters pushed homes off their foundations
Vanport Flood, 1948, by Hugh Ackroyd
Oregon Historical Society, OHS 18296

The 1964 Christmas Week Flood

After a week of near zero temperatures and heavy snow, a warm, wet air mass stormed the Pacific Northwest. The Portland airport had 33 inches of snow on the ground when, suddenly, thermometer readings soared into the sixties and rains came in a deluge. All the rain and snow ran off the frozen ground into streams and rivers—virtually no moisture entered the soil.

In Portland the Willamette River crested at 32.45 feet on Christmas Day. Without the Willamette Valley dams the floodwaters would have easily flowed over the seawall.

"Harbor Drive in Portland is closed as the Willamette holds its level just three feet below the top of the seawall's concrete railing."

— Robert E. Landsburg



S. E. Nelson, National Geographic Society, Delta Park, Columbia River
Oregon Historical Society, OHS 1964-1



Floodwaters threaten OMSI, 1996, by S. G. Walker

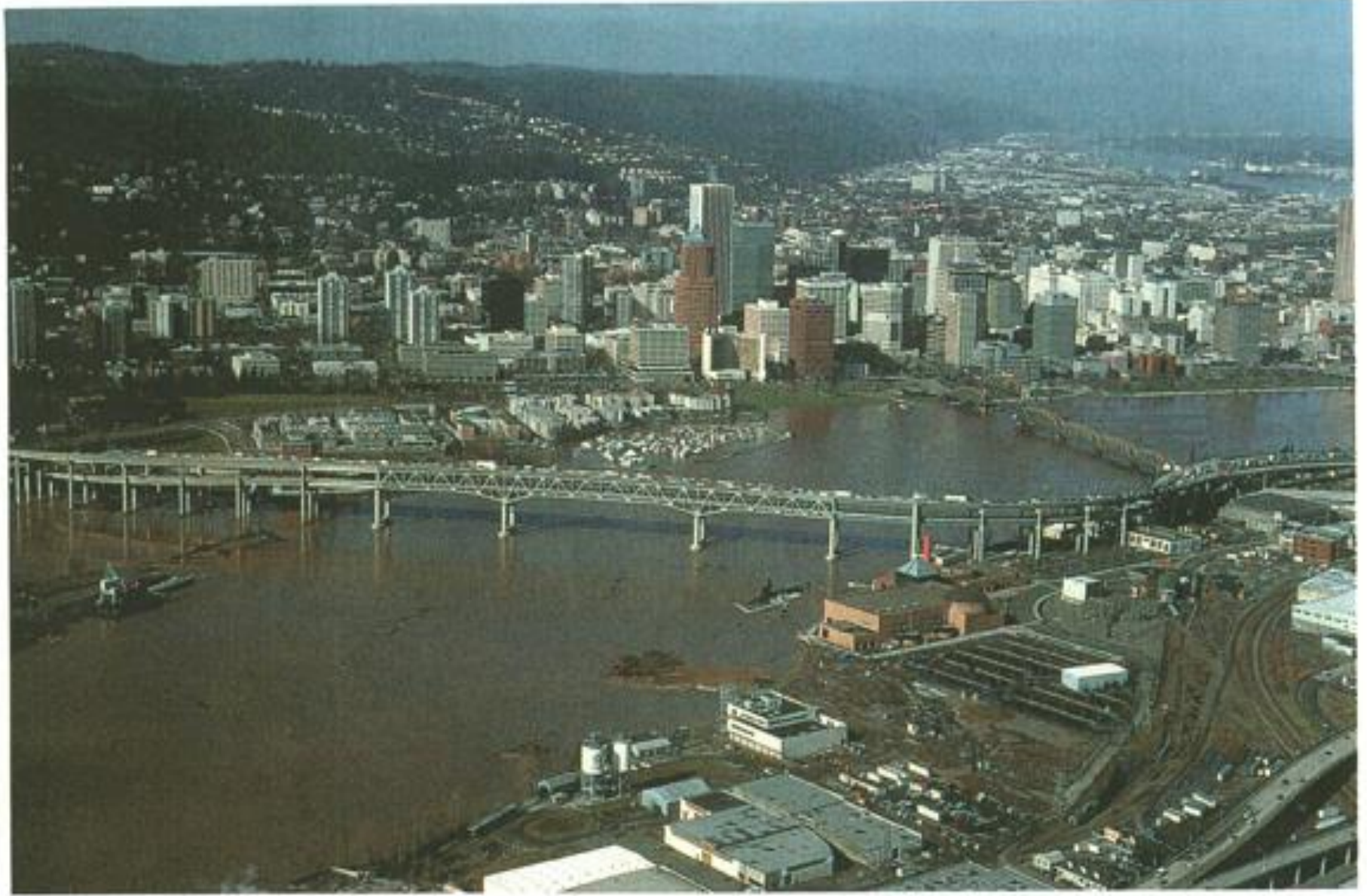
The Great Flood of 1996

Soils and streams in the Willamette Valley had soaked up more rain than usual by the start of 1996. In the last half of January, winter storms packed the mountains with snow. Late in the month, an intense cold spell froze the saturated soil and iced it with freezing rain. Then on February 6, a warm, wet subtropical storm rolled into Portland and dumped 7 inches of rain in four days. The ground thawed, the snows melted, the soils slid, and the waters rose. The river crested in Portland on February 8 at 28.6 feet.

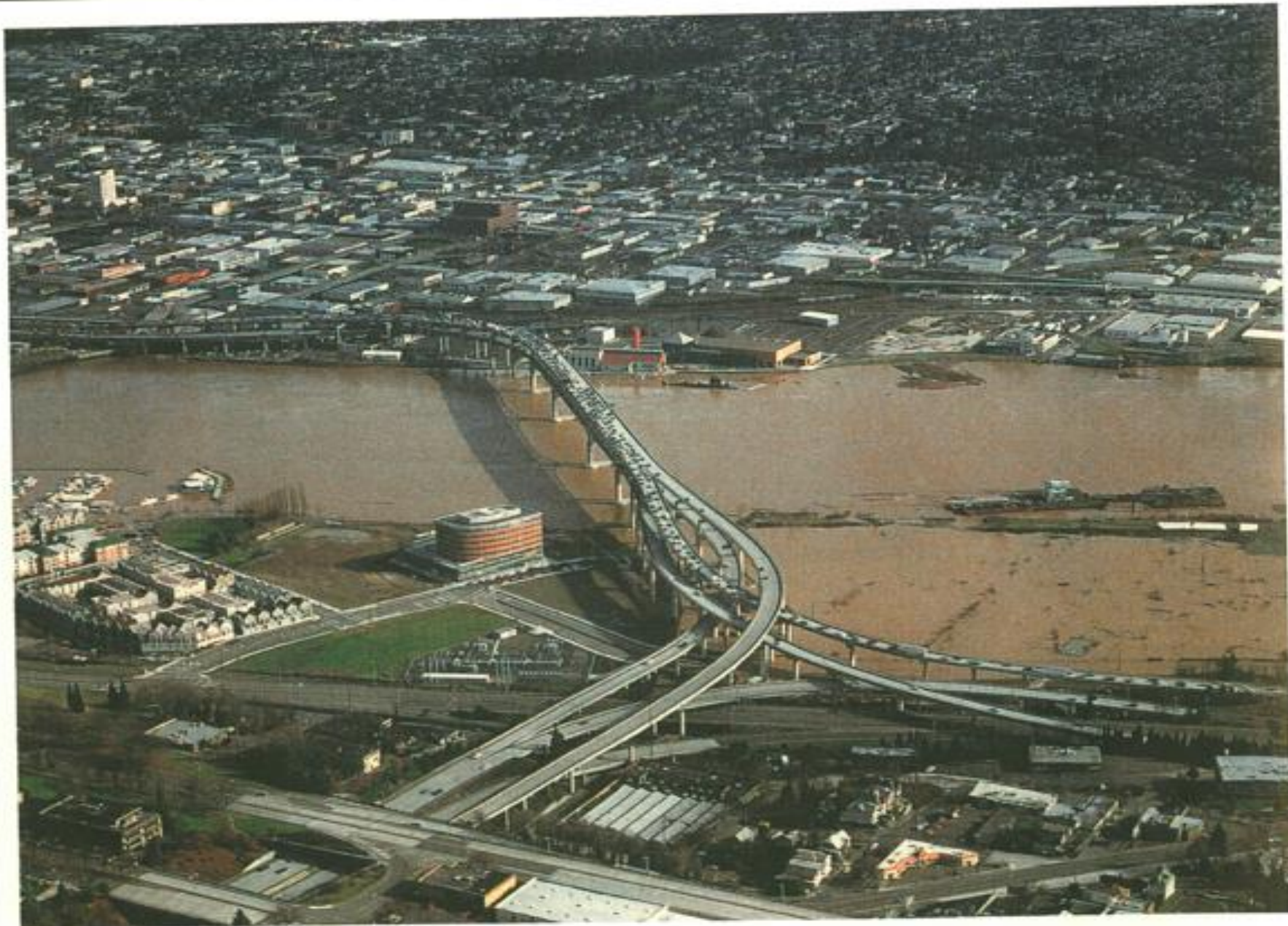


Fearing a crest of over 30 feet that would pour into downtown, Portlanders hastily barricaded and sandbagged the seawall, Hawthorne Bridge, February 1996, by Evan Schneider
Oregon Historical Society, OHS 1996-15

Background image
Bridge washed out in Salem, 1997
Oregon Historical Society, OHS 1997-10



Marquam Bridge area looking north, Portland.



Marquam Bridge area looking east, Portland.











2 8 '96





2 9 '96

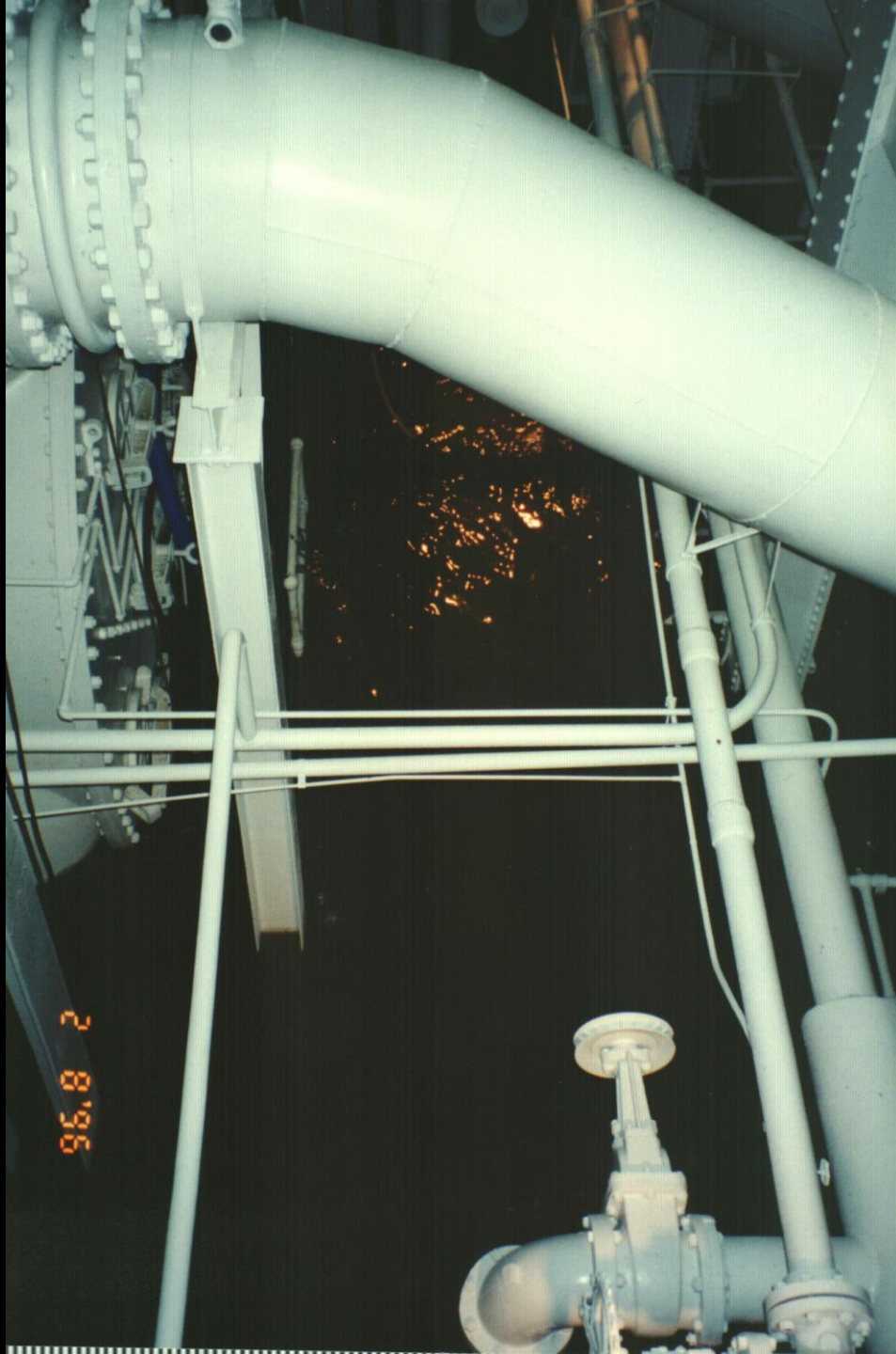






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CAUTION
WET



OMSI federal help in repairing flood damage

■ The government will pay as much as 75 percent of the cost not covered by property insurance

By STEVE WOODWARD
of The Oregonian Staff

The federal government helped part the waters Tuesday for the flooded wharfed Oregon Museum of Science and Industry.

The Federal Emergency Management Agency indicated it would pay as much as 75 percent of the flood

damage repair cost not covered by OMSI's \$20 million in property insurance.

OMSI President Edward G. Gibson said the damage is estimated at \$1.5 million to \$2 million, although that figure could change as museum officials and their consulting engineers continue their tally.

Although the damage is covered by insurance, OMSI's real deductible block has been the \$500,000 deducti-

Please turn to OMSI, Page A9

OMSI: FEMA would provide money

■ Continued from Page One

able on the insurance policy. In addition, OMSI faces a \$100,000 deductible on the insurance policy. In addition, OMSI faces a \$100,000 deductible on a separate \$2 million policy for the USS Blueback submarine, which also was damaged by

water. OMSI President Edward G. Gibson, wearing a jacket and blue FEMA cap, surveyed the damage firsthand Tuesday morning with OMSI officials and recovery chief for the Oregon State Police's Emergency Management Division.

They got a duck's-eye view of the 3½ feet of water that has flooded back into the Turbine Hall basement as this week's rains sent

cash-strapped museum's long passage to financial health. But he said he wanted to dispel rumors that the flood is washing OMSI down the drain.

"We plan on opening, and when we do open," he said, "we'll come back stronger than ever."

The good news from FEMA comes in the wake of a much-needed \$40,000 contribution from Portland-based Pacific Gas Transmission Co. The company, which owns and operates a natural gas pipeline in the

OMSI must lock up for several weeks

Museum employees will be laid off until flood damage can be assessed and repaired

By NORM MAVES JR.
of The Oregonian staff

The Oregon Museum of Science and Industry has faced up to two inescapable facts: Water damage from last week's flood will keep the museum closed for somewhere between one and three months. And there will

be no way to get the museum back open until flood damage can be assessed and repaired. But the number is likely to run into seven figures.

And without people coming through the gates, facilities director Rod McDowell said, there will be no reason to have ticket takers, food service workers, guides and personnel to run the Omnimax Theatre.

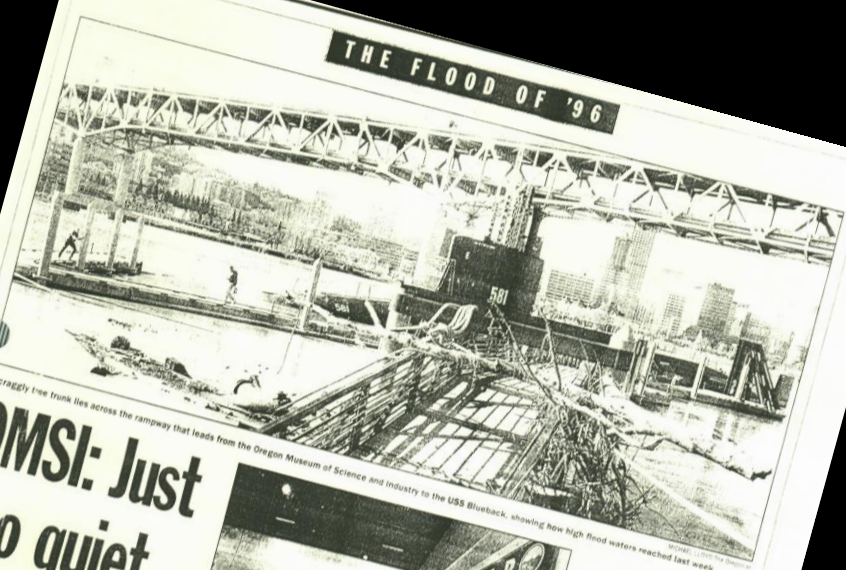
some staff to seek unemployment. We don't know how long — three weeks or three months; we just don't know."

"We know if unemployment is not enough to live on," Gibson added Tuesday, "they will seek other employment. And that's the tragedy of it. We want to keep them."

OMSI: Just too quiet

FLOOD PHONES
■ PORTLAND
HELP 423-0333
for damage

Hit by last week's
the fine



A scraggly tree trunk lies across the rampway that leads from the Oregon Museum of Science and Industry to the USS Blueback, showing how high flood waters reached last week.



A restored Nash Metropolitan was the only car on Tuesday, Sept. 10, 1996.

Flood shuts OMSI's doors

PORTLAND (AP) — The Oregon Museum of Science and Industry will close for one to three months while flood damage is repaired. Rod McDowell, facilities manager, estimated that the museum will be down for 60 days, but nobody can pin it down for certain. The list of repairs is long. 970
The closure also means layoffs. At an upcoming staff meeting, Ed Gibson, museum president, will advise some staff to seek unemployment. We don't know how long — three weeks or three months. Last fall, OMSI

High water threatens to damage OMSI

The Associated Press 9-10

PORTLAND — Giant water pumps were being used to try to prevent serious damage to the electrical system at the Oregon Museum of Science and Industry.

The museum faced the prospect of being

proached the top of the seawall.

Those trying to get sandbags, plywood and other materials to volunteers building a barrier above the seawall were blocked by the traffic and the crowds of bystanders.

Clackamas: Some roads on higher ground in the east side of the suburban Portland-area were starting to open up Thursday while roads around Oregon City and Milwaukie were being

pecially in dike districts along the Columbia River.

Nearly the entire town of Clatskanie was under about 3 feet of water. About 200 Clatskanie

FLOOD RECOVERY PLAN

- * Review damaged areas that were damaged from the flood
- * River pumps for heating and cooling need to be replaced. These are a must for the OMNIMAX and maintaining temperature control throughout the museum.
- Electrical Room
 - *1. Floor will need to be replaced
 - *2. Electric equipment inside panel possibly damaged
 - 3. Sheet rock replacement
 - *4. Clean and reseal floor
 - *5. Electrical to river pumps have to be replaced.
 - *6. Transformer in phone room has to be cleaned.
- Phone room
 - *1. Phone cards will need to be replaced. They took moisture and are warping out of shape.
 - 2. Cost of replacement
 - *3. Clean and reseal floor
- Chiller room
 - 1. Possible floor damage.
 - *2. Clean and reseal floor.
 - *3. Both chillers need to be cleaned.
 - *4. Chiller one (1) is down and will need repairs.
 - *5. Pump #9 needs repairs.
 - *6. Heat exchangers need to be cleaned due to flood.
 - *7. Exhaust fan #23, back up fire exhaust is gone - filled with water.
 - *8. DDC Barb Coleman System for our heating and cooling system damaged. This is the brains.
 - *9. All motors need to be checked by electrician.
 - *10. Check all conduits for water. Wire will have to be replaced in certain areas.
- Lower Sub Basement
 - *1. Elevator mechanical room destroyed by water (Glass elevator).
 - *2. The 6" pump and electrical box destroyed by water.
 - *3. Fire proofing on steel structure will have to be cleaned and replaced.
 - 4. All sheet rock on wall needs replacing
 - *5. Fire alarm system - all wiring needs replacing
 - *6. Fire sprinkler system - all heads need replacement
 - *7. Floor will need to be cleaned and sealed
 - 8. Handrails cleaned and painted
 - 9. Walls cleaned and painted

* These areas must be completed before re-opening

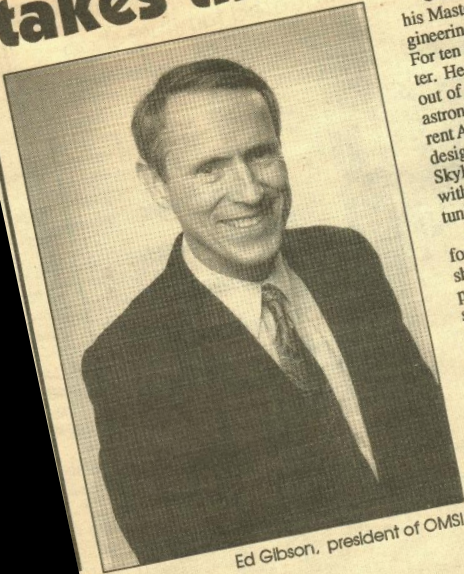
Recovery Plan

Page 2

- Generator Room
 - 1. Floor cleaned and sealed.
 - *2. All electrical support needs to be checked out.
 - *3. All oil for generators and compressors changed.
 - *4. Fire generator up for performance.
- Turbine Hall
 - *1. Entire floor needs to be cleaned and resealed.
 - 2. Walls need to be cleaned and repainted.
 - *3. Inspect all electrical systems.
- Pipe Exhibit (Turbine Hall)
 - 1. Handrails cleaned and painted.
 - 2. All lower pipes cleaned and repainted.
 - 3. Lower floor cleaned and sealed.
 - *4. Pull existing pump - clean and reinstall.
 - 5. Stairwell cleaned, resealed and painted.
- Air handlers
 - *1. All filters need to be changed.
 - *2. Evaluate equipment performance.
 - *3. All electrical systems checked.
- Lobby
 - *1. Floor - either will have to be cut in certain sections and replace or tiles replaced.
 - *2. Floor cleaned and sealed.
 - *3. Walls need to be cleaned and repainted (flood water splashes).
 - *4. Simplex fire alarm system has to be checked, tested, and inspected.
- Custodial
 - *1. All carpets need to be cleaned and disinfected.
 - *2. Disinfect walls, steps and handrails.
 - *3. Entire building needs to be cleaned and disinfected.
 - *4. Dehumidification will have to take place in the entire facility. This process will take at least 48 hours.
- Submarine
 - *1. Structure damage to docks, concrete is cracked in certain areas.
 - *2. Electrical system to Submarine will have to be redone.
 - *3. Remove all debris
 - *4. Clean and sanitize the entire ramp

* These areas must be completed before re-opening

A guy with the right stuff takes the helm at OMSI



Ed Gibson, president of OMSI

BY LAURA GAMBLE

...the world was divided into those who had it and those who did not...the ability to go up in a hurtling piece of machinery and put his hide on the line and then have the moxie, the reflexes, the experience, the

Gibson's credentials are impressive. He received his Master and Doctor of Philosophy degrees in Engineering at the California Institute of Technology. For ten years he was at NASA's Johnson Space Center. He was selected as one of six scientist-astronauts out of 2,000 applicants and one of ten non-military astronauts ever. On Skylab III he established the current American record of 84 days in space, performing design, verification and in-flight operations of the Skylab Space Station. "There were many dark days with Sky Lab," he says. Changes gave birth to opportunities.

The exploration of space is still an intense interest for Gibson. He believes that public-private partnerships will arise which will cut costs and provide opportunities for first class laboratories to do first class science. Commercial undertakings might include the development of new drugs and vaccines, engineering materials and the use of zero-gravity. He likens such ventures to those of explorers like Christopher Columbus, who brought back exotic spices from the New World, who next 50 years, he believes, will be living in space.

In addition to writing a book on plasma arc welding, he has more than 4,000 hours of flight experience. He has successfully completed a search project under budget for the United States Space Administration. He has received numerous honors and awards.

is E... building... can... year...

OMSI delays reopening until May

By Ron Cowan

The Statesman Journal
PORTLAND

counting. If you were to the Oregon Museum of Science and Industry, you'll have to wait until spring of 1997.

The popular science museum with its OMNIMAX and laser light theaters and the USS Blueback submarine is still out of commission following the February floods and won't reopen until

"We just don't have the day."

OMSI, on the east bank of the Willamette River, sustained more than \$1.5 million in damage from flooding. The museum is insured and is expecting to get federal help with paying the deductible on its coverage.

Wilder said the museum had to repair the electrical system, replace the concrete floor in the basement of the Turbine Hall — where most of the flooding occurred.

The entire building remains closed because the heating and cooling system was damaged, affecting the theaters, and contaminated water was tracked throughout the building. The entire complex must be wiped down and sterilized, Wilder said. OMSI classes and camps continue at other sites, and OMSI is planning to keep its name alive with a traveling Bite Size Science exhibit run by volunteers, Wilder said.

date and final



PLEASE ASK TO BE SEATED

DURING BUSINESS HOURS

EMERGENCY
EXIT ONLY

EMERGENCY
EXIT ONLY

Volunteer
Office

EMERGENCY
EXIT ONLY

OMSI
Olympic Museum and Sports Institute

May 1996 OMSI's Grand Re-Opening



Ed Gibson
OMSI President

Welcome back to OMSI! It's a great day for OMSI, one filled with pride and appreciation. We sincerely thank the volunteers and staff whose efforts prevented even more severe damage to the museum than we did suffer; those who have toiled to restore the museum to excellent condition, and those who have offered their concern and financial support over the past four months. Yes, as we reopen our doors, we have much to be thankful for. But clearly, highest on the list is that, once again, we have the opportunity to fulfill our mission. Through excitement and education, OMSI changes lives – and now we've come back to do better than ever!

OMSI is one of the real treasures of Oregon, providing an educational and entertaining experience with each visit.

As the doors to our museum re-open, we celebrate the re-emergence of an invaluable part of our community. A special thank you to staff, supporters, and volunteers who have worked so hard to make OMSI what it is today. It is with great pride that I join Ed in welcoming you back to the most unique learning facility in the Pacific Northwest!



Chris Popper
Board of Trustees Chairman

May 24-27, 1996

OMSI would like to thank the following businesses, who have helped make the Grand Reopening possible:

Old Spaghetti Factory	Damerow Ford
Price Waterhouse	Speeds Towing
KPTV	Incredible Universe
Pepsi	Nike
Taco Bell	Latitudes
Tri-Met	Starbucks
Fred Meyer	Signs Now
Jiffy Lube	Mike's Original Ice Cream
WB3Z	Oregon Screen Impressions

*Now open on
the river, not in it.*



During the Great Flood of '96:

OMSI's basement flooded with nearly 18 feet of water. Large pumps returned over 10,000 gallons of water a minute back to the Willamette River. A total of 5,628 sandbags were used in OMSI's fight against the raging Willamette River. Hundreds of OMSI employees and volunteers worked tirelessly to fill sandbags and move first-floor exhibits to higher ground.



*We're pumped for our
Grand Reopening.*

OMSI Staff 1996

OMSI's Grand Re-Opening Celebration!

After being closed for over three months due to flood damage, the staff, volunteers and Board of Directors welcome you back to OMSI. We hope you enjoy your visit.

Friday, May 24

Museum open until 7:00pm

Reopening Ceremony – 10:00am

Plaza

Courtyard Activities – 11:00am - 4:00pm

West side of building, outdoors

Fireboat Display – 12:30pm

On Willamette River

Reopening Celebration Cake Cutting – 2:00pm

Museum lobby

Lazirvana Premiere – 9:30pm

Murlock Sky Theater

Saturday, May 25

Museum open 9:30am - 7:00pm

Camp and Class Fair – 10:00am - 3:00pm

Auditorium

Courtyard Activities – 11:00am - 4:00pm

West side of building, outdoors

Ed Gibson, OMSI President and former Sky Lab astronaut,

Autograph Session – 11:00am - 12:00pm

Turbine Hall

Reopening Celebration Cake-Cutting – 2:00pm

Museum lobby

Sunday, May 26

Museum open 9:30am - 7:00pm

Camp and Class Fair – 10:00am - 3:00pm

Auditorium

Courtyard Activities – 11:00am - 4:00pm

West side of building, outdoors

Star Trek Look-Alike Contest – 2:00pm

Museum lobby

Reopening Celebration Cake-Cutting – 2:00pm

Museum lobby

Monday, May 27

Museum open 9:30am - 7:00pm

Camp and Class Fair – 10:00am - 3:00pm

Auditorium

Courtyard Activities – 11:00am - 4:00pm

West side of building, outdoors

**USS Blueback Submarine Veteran's Memorial Ceremony and
Ground-Breaking – 2:00pm**

West side of building, outdoors

Memorial Day Cake-Cutting – 2:45pm

Museum lobby

Special attractions:

OMNIMAX Theater: *Antarctica, Destiny in Space and The First Emperor of China*

Sky Theater: *Orion Rendezvous, SkyWatch*

National touring exhibit: *STAR TREK: Federation Science™*

