

Joseph Gray, Jr.
Director of Planning & Urban Development
City Hall, Rm. #211
389 Congress St.
Portland, ME
04101

Dear Joseph:

Sitting on the rocks that line the East End Beach, I'm struck by beauty, the sound of birds, the smell of the ocean. A place where CITY people can boat, beach and stroll. A refuge of relaxation (of which there are few) within the city limits. And then I think about the proposed narrow gauge railroad. Noise and smoke, running right through that refugee.

It is interesting that the perimeter of Munjoy Hill is the selected site. Is it because it's easier to locate in the part of town with lower incomes and less political connections? Fewer doctors and lawyers who would be its' neighbors? What about the deserted railroad bed on the west side of town under the Million Dollar Bridge? Or the town where these railroad hobbyists reside?

A railroad proponent at a meeting commented to the effect, What's the big deal? There used to be a railroad here anyway. It's a part of the area's history. There was a white lead works company that was situated on Munjoy St. back in 1876. Should we bring a version of that back too as a part of the area's history?

I'm sure the idea of increased taxable income and tourism make this railroad proposal appealing. **I urge you to strongly consider another home for the hobbyists' trains.** Leave us our refugee of relaxation.

Thank you for your time and consideration of this matter.

Sincerely,

 6/8/94

Leslie Rothman
Munjoy Hill Resident

Rodney S Quinn, 45 East Promenade, Portland, ME 04101 (207) 761 4514

May 20

Joseph E Gray Jr.
Director of Planning and Development
City Hall, Rm 211
399 Congress St, Portland

In reference to the proposed installation of a narrow gauge railway adjacent to or on the eastern Promenade:

As abutters and residents, my wife and I would like to register our objections. Our reasons in brief:

A train "ride" would be out of character and not be in keeping with a community place of rest and family recreation -- it is an entertainment and commercial venture little different than ferris wheels, merry go rounds and the like.

It is essentially a tourist attraction. It seems doubtful that Portland residents would be willing to consistently repeat the thrill of a ride very many times, leaving its use, after an initial curiosity, to visitors. The basic purpose of Portland Parks should not be to "attract tourists".

It would pollute an already marginal atmosphere with noise and smoke.

It would be dangerous, particularly to children, elderly, handicapped, and pets.

This equipment is antique and difficult to keep up, and despite its nomenclature of "narrow gauge", weighs tons. Both the equipment itself and the road bed will require a great deal of maintenance when in regular use. We have heard little about firm longterm finances for such protection, and we doubt that firm guarantees can be given by the promoters.

Sincerely,



Rodney S Quinn

RECEIVED
MAY 24 1994
PORTLAND PLANNING OFFICE

John P. and Kathleen T. Wirtz

June 10, 1994

Ms. Jadine O'Brien, Chair
Portland City Planning Board
389 Congress St.
Portland, ME 04101

Dear Ms. O'Brien:

Kathleen and I read with interest the report in this morning's Press Herald regarding the vote by The Friends of the Parks Commission to oppose the "temporary" laying of tracks by Phineas Sprague's group.

Particularly intriguing, we thought, was Mr. Sprague's lament: "What do they want us to do? It seems like somebody doesn't really understand the nature of our offer to co-exist with them. What we have said is," he continued, "when and if [my emphasis] they get the park planned, we have committed to move the rail at our own expense if they want it in another location."

Ms. O'Brien, it somehow strikes us that Mr. Sprague's "and if" says volumes about his skepticism concerning the future prospects of Portland Trails' people's recreational path as well as his own notion of who has priority in the scheme of things.

Another news article in the Press Herald, that of May 28, carried a headline that said, "Founders fight over railroad's fate." Given the reported dissension among disgruntled former trustee-investors of the MNGRR over Mr. Sprague's modus operandi, one must wonder what this says about the MNGRR's near- or long-term financial viability.

Sincerely yours,


John P. Wirtz

Barbara A. Vestal
7 Fore Street
Portland, Maine
May 24, 1994

Portland Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Proposed Temporary Track, Maine Narrow Gauge Railroad, 58
Fore Street

Dear Planning Board Members:

As an across-the-street abutter to the site of the Maine Narrow Gauge Railroad museum, I am concerned about the impact of the proposed museum expansion on my residence and on my neighborhood. My specific concerns at this workshop stage are as follows:

1. **Air emissions:** The type of fuel used to power the train will make a great difference in whether this proposed expansion will be compatible with the adjacent pedestrian trail and residential neighborhood. It is my understanding that it would be possible to convert an engine to run on relatively clean-burning natural gas for approximately \$10,000. This is a small price to pay to resolve this problem in comparison to the \$800,000 reported to have already been invested in this project. I believe the Planning Board should impose a condition requiring the use of natural gas as the sole fuel used to power the train.

Well in advance of any public hearing, I believe the Planning Board should require the applicant to specify precisely what type of fuel it proposes to use. Until this is done, the public is unable to properly evaluate and comment on this issue. If the applicant is proposing to use a fuel other than natural gas, I believe the Planning Board should also request that the applicant provide it and the public with information about the feasibility of using natural gas as an alternative fuel.

2. **Noise:** Regulating noise emissions is critical to fitting this industrial type of use into a residential neighborhood. It will also be a key determinant of whether the trail system will provide a high-quality experience for

pedestrians who seek to enjoy the beauty of the Casco Bay shoreline in relative solitude. Based on our experience with the BIW drydock in that vicinity, noise seems to be amplified by the water and travels unimpeded into the adjacent residential area. I believe that it is imperative for the Planning Board to obtain appropriate information from the applicant about noise-generating activities and to take sufficient time to craft appropriate restrictions to minimize noise impacts on the neighborhood.

To have adequate information to review impacts and impose appropriate conditions, the applicant should be requested to provide information to the Planning Board and the public, well in advance of any public hearing, detailing precisely where it is proposing to lay the temporary track; the estimated noise levels from normal train operation; maximum noise levels projected from all associated activities, and at what times whistles or other warning devices will be used (i.e., each time the train starts up, crosses the access road to the marina, comes to the end of the temporary track, changes direction, etc.) Noise data collected by Doug Mason of the City planning staff in 1981-82 in several immediately abutting sites should be consulted to compare the projected noise to the baseline information.

I am particularly concerned that the Planning Board impose restrictions on hours of train operation so that this aspect of the museum use will not interfere with residents' right of quiet enjoyment of their homes nor interfere with the ability of pedestrian users of the trail to find times to use it in relative peace. It would seem reasonable to allow the train to operate only from 10:00 a.m. to 4:00 p.m.

In addition to specifying hours of operation, I believe the Planning Board also needs to impose carefully crafted restrictions specifying maximum noise limits. As Board members may recall, this would be similar to the process previously utilized when the Board reviewed the BIW drydock project and the industrial rezoning precipitated by Merrill Marine Terminal's proposed cement silos. Specific conditions are necessary to mitigate noise impacts; it would be completely inadequate to rely on the noise provisions in the existing zoning ordinance because 1) the proposed track will probably span two or more zones, some of which do not even have existing noise provisions; and 2) the noise with greatest potential impact is from the whistle, a "warning device" which might be exempt from the existing noise standards.

The Board should also explore whether the frequency of use and decibel level of the whistle exceed what would otherwise be required for safety in this particular applica-

tion. If so, the Planning Board should impose a condition restricting the frequency of use and decibel level of the whistle. The fact that this train will be operating much below the speeds it was designed for should mean that the whistle need not be heard as far away. This should allow the applicant to muffle the whistle so it is only heard in the immediate vicinity of those who need to be warned of its passage without any compromise in its safety function. The applicant should not be allowed to impact a residential neighborhood by using an unnecessarily loud whistle as an advertising device to attract potential riders from the Old Port.

Please note that I believe it is important to address all three aspects -- hours of operation, maximum noise levels, and use of the whistle -- in order to mitigate noise impacts. Merely restricting hours of operation is not sufficient. Many residents in the immediate vicinity are elderly and will be at home during even restricted hours of operation.

3. **Water-dependent Uses:** The Planning Board should also take care in applying the "no adverse impact on marine uses" standards (14-320.55) of the Waterfront Special Use Zone. As an expansion of a museum use in this zone, the proposed use would need to meet these standards. Clearly the museum is a non-water dependent use. Its siting or expansion cannot substantially reduce or inhibit public access to marine waters by users of the pedestrian trail.

4. **Environmental Impacts:** It is my understanding that no permits are required from the Department of Environmental protection for this phase of the project, so no environmental reviews will be performed unless requested by the Planning Board. While I recognize that an active train was in this corridor until several years ago, it might be prudent to determine whether this area is now acting as habitat for any particularly high value wildlife. The Board could direct the planning staff to contact Maine Inland Fisheries and Wildlife and the Department of Marine Resources to see if there is any readily available information on this site.

5. **Completion Bond:** It is my understanding that the applicant has stated that it will make any required modifications to the proposed temporary tracks to make the tracks consistent with the final plan for the trail corridor. It is further my understanding that the applicant is proposing to rely to a large extent on volunteer labor to complete the initial installation. It is critical that a completion bond or similar guarantee of performance be posted so that there

are sufficient funds to modify this temporary installation, if required. This is a key element of Portland's shoreway access system. It should not be compromised by the prospect that in the future sufficient volunteer labor may not be available to reverse any temporary installation.

6. **Process/Timing:** I also have concerns about the existence of a train in this vicinity at all, and concerns about the process of the applicant applying for temporary track installation prior to completion of the comprehensive trail planning process. While the Planning Board may not be able to deny the application on the ground that the applicant is short-circuiting the trail planning process, the Planning Board should clearly go on record that, if it grants this application, it will not be bound in future reviews by what is done under this application. The applicant should be put on express notice that it is proceeding at its own risk, and any investment made to install temporary track will be disregarded and will not be accepted as a limiting condition in future Planning Board actions.

Thank you for considering these comments.

Very truly yours,



Barbara A. Vestal

cc: Rick Knowland
Joe Gray
Natalie Burns

MAY - 6 1994



Rob
**AMERICAN
LUNG
ASSOCIATION®**
of Maine

May 4, 1994

Mr. Robert Ganley
City Manager
389 Congress Street Room 211
Portland, Maine 04101

Dear Mr. Ganley:

Over the past months, citizens from the Monjoy Hill Neighborhood Organization contacted me regarding the proposed narrow gauge train near the Eastern Promenade. Concerns have been raised over both the toxicity of the air emissions that could come from such a train, as well as the process by which the potential health effects from this project are to be evaluated. The American Lung Association of Maine believes that these concerns are legitimate, given the nature of the project.

The pollutants generated from coal burning units are among the most toxic of any combustion source. The impacts from a train engine, whose concentrated emission plume could create localized problems, are particularly worrisome. Furthermore, a growing body of scientific evidence suggests that there is no safe level of exposure associated with the fine particles emitted from fuel combustion. At greatest risk are those individuals with pre-existing lung or cardiovascular diseases.

According to the state agencies, most if not all of the decision making authority for this project rests at the local level. In light of the potential threats to health and well being which the air emissions could present, we urge the City of Portland to conduct an assessment of their environmental impacts before making its decision. We would be happy to assist you in any way we can.

Sincerely,

Norman Anderson
Norman Anderson
Director of Environmental Health

cc: Ms. Ann Pringle, Mayor of Portland
Mr. John Wirtz, MHNO

When You Can't Breathe, Nothing Else Matters®

128 SEWALL STREET, AUGUSTA, ME 04330
(207) 622-6394 1-800-499-LUNG FAX (207) 626-2919

environment • health • outdoors
Hannah Holmes
53 Hammond St. Portland, ME 04101
207.774.0734

June 24, 1994

Dear Members of the Planning Board:

I regret being unable to attend the public hearing of June 28, and would like to weigh in in favor of public areas that are reserved for peaceful pursuits and natural experiences. Its recent history as a functioning rail line notwithstanding, the corridor below the Eastern Prom is now such a place.

My opposition to running a narrow-gauge train around the base of the Prom does not arise out a sense of NIMBY-ism. Rather, it is a case of NIPFY — Not In Portland's Front Yard. The Eastern Prom is by any standard Portland's most strikingly gorgeous side. It also offers unmatched access to a beach, boat launches, and fishing spots, as well as providing an exercise venue and an opportunity to encounter wild plants and animals.

It is exactly the sort of quiet and contemplative natural area that many cities are now going to great lengths to protect. As a nation, we have realized in recent years that green space is a rapidly dwindling resource in most cities — that it should be jealously protected where it occurs, and created whenever the opportunity arises.

There are one hundred and one specific reasons to object to the plan as proposed, but the real issue is one of location. When there are so many parts of the city that are fully developed and bustling and busy, many places where such a striking historical artifact as a (clean-fueled) narrow-gauge train would be an undeniable asset, to sacrifice the tranquility of the Eastern Prom seems untenable.

For this reason, I oppose the laying of narrow-gauge track on either a temporary or permanent basis.

Respectfully,



AMC Outdoors • Animals • Backpacker • Bicycle Guide • BioCycle • Garbage • Healthy Woman • Island News • Modern Maturity • Mother Jones • MS • New Age • Old House Journal • Parenting • Self • Sierra • Utne Reader • Walking • Washington Monthly

RECEIVED

JUN 28 1994

PORTLAND PLANNING OFFICE



122 Cumberland Avenue • Portland, Maine 04101 • 775-0493

6-27-94

JADINE O'BRIEN, CHAIR, PORT. PLANNING
BOARD:

AS A PROPERTY OWNER ON THE
PENINSULA, BUSINESS OWNER, NATIVE OF PORTLAND
AND AN ENVIRONMENTALLY CONCERNED PERSON,
I FIND THE N. GAUGE R.R. TO BE
ALMOST ENVIR. "BENIGN" AND A HISTORIC-
ALLY DESIRABLE ATTRACTION TO
PORTLAND AND "THE HILL".

WANT TO IMPROVE AIR QUALITY?
ENFORCE CAR EMISSION ISSUES AND
CLEAN-UP THAT GROTESQUE NEAR-BY
HUGE EMITTER... CMP @ COUSINS IS.

PETER BROWN
IN-TOWN TUNE-UP

Attn: Jadine O'Brien
Portland Planning Board
389 Congress Street
Portland, Maine 04101

From: Alden P. Stickney, Trustee and member of
Bowdoin Region Historical Society, also
Southport Town Planning Board

Please write your comments regarding the placement of the Narrow Gauge temporary track on the Eastern Promenade. Your comments will be passed on to the Portland Planning Board. The Planning Board meeting will be held at City Hall, Tuesday June 28 at 7:00pm.

It is my opinion that the historical and cultural benefits of this operation will far outweigh any slight inconvenience due to noise or odors. I believe the plan to place the tracks on or near the Eastern Promenade is the best placement available at this time.

The location of this historical gem in Portland can only add to the cultural and historical prestige of the city.

Alden P. Stickney



Mr. George M. Snow
59 Spruce St.
Portland, ME 04102

June 24, 1994

Portland Planning Board
City Hall
389 Congress St.
Portland, Maine

Please give the Maine Narrow Gauge Railroad a chance to prove its value and safety by letting it run a temporary track along the Eastern Promenade.

1. It could prove to be a real tourist attraction.
2. Smoke and noise may be less than detractors claim. Wouldn't prevailing winds carry smoke away from Peninsula?
3. My opinion is that the Railroad would not interfere with the Eastern Prom Trail.
4. Couldn't provision be made for a review of the Railroad operation after one or two years' trial, to determine whether it should continue and what track alignment changes are needed, if any?
5. Don't foreclose this opportunity without even a trial run !

Thank you -
George M. Snow
George M. Snow

True Copy

Edgar T. Mead, King Road, Etna, NH 03750

Ms Jadine O'Brien
Planning Board
City Hall
Portland, ME 04101

Dear Madame:

I wish to intercede in defense of the Maine Narrow Gauge Museum which wishes to build a short, demonstration trainride on the same roadbed which supported trains for one hundred years.

For the record, I have been a Selectman, Plan Board Member, Finance Board Member, Library Trustee of the Town of Hanover, NH. I have also been Director of Public Transportation for the State of New Hampshire. I was also Superintendent of the narrow gauge Bridgton & Harrison Railway in Cumberland County, Maine. I have written several books dealing with narrow gauge railroads.

My main points are: (1) This is a valid and important project on the subject of Maine History. (2) The train and museum are ideal for family type of activity. (3) On the order of 100 train museums in this country alone are operating without complaint, and in fact they operate in most cases with neighbor support. (4) A demonstration of the limited type envisioned (three or four movements in a holiday) will prove to be an economic asset to the community. (Railfans will come to Portland from 50 states and Canada.) (5) My own experience over 50 years in recreational trains and as a founding member help to guarantee compliance with local rules and traditions.

I support this project.

6/23/74

Yours truly,

Edgar T. Mead

ELMER L. BAXTER
16 BIRCH LANE
PORTLAND ME 04110

JUNE 23, 1994

Ms. Jadine O'Brien
Portland Planning Board
389 Congress Street
Portland Maine 04101

Dear Ms. O'Brien:

Please look with favor on the application of the Maine Narrow Gauge Railroad and Museum to lay a track and run trains on the old Grand Trunk Railroad from India street along the shore under Fort Allen Park.

Many volunteers have contributed money, time and effort to this project at no cost to the city or state. It appears that the entire area will benefit from their efforts, as shown by the enthusiasm of those attending and participating in publicized events, such as the recent Railfair. These activities attract people from all over New England and beyond.

The people of Portland and surrounding towns could be proud of this special attraction which has real Historical significance. We are lucky that all this equipment has been preserved, so that we can enjoy seeing it in operation today.

Although all the work is done by volunteers, there are costs which must be met, and the organization needs whatever revenue can be obtained from the contributions of passengers on operating trains. Therefore, the ability to lay at least temporary track this summer is an important factor.

Thank you for your consideration.


ELMER L. BAXTER

June 23, 1994

Mrs. Jadine O'Brien
Chairperson, Planning Board
City of Portland
389 Congress St.
Portland, ME 04101

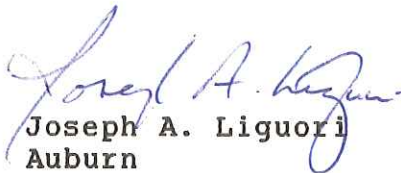
Dear Mrs. O'Brien,

I am writing this letter to express my support for the MAINE NARROW GAUGE RAILROAD & MUSEUM and the efforts of the many volunteers who are helping to restore the railroad to its original condition.

This railroad is a part of Maine's history and we have an opportunity before us to restore and preserve this important part of our heritage. As Cubmaster of a Cub Scout Pack in Auburn, our scouts are taking part in the restoration of the railroad. It is an opportunity for them to be involved in an effort to preserve, not to mention the fact that their involvement is helping them develop the spirit of dedication to Community Service.

To restore this railroad to its original condition and operate it would be a tribute to the work ethic we in Maine take pride in.

Sincerely,


Joseph A. Liguori
Auburn

March 28, 1995

Portland Planning Board Members
Portland City Hall
389 Congress St.
Portland, ME 04101

I am totally opposed to the Maine Narrow Gauge Rail Road's proposal for laying of more track, for using coal fired engines and for extending the running hours of the train.

This project is a major undertaking for an organization staffed only by volunteers. I question their administrative ability to comply to all the necessary and serious public safety and health standards that such a project demands. I don't trust that they are a coherent organization.

They don't have the best interests of my neighborhood in mind with their new proposals.

Again I am opposed to the Maine Narrow Gauge Rail Road's proposal for laying of more track and for using coal fired engines and for extending the running hours of the train. Please delay this decision until August 1995 when open windows and summertime use of the train give residents a better idea of the full impact of the train for the part of the tracks that are already installed.

Sincerely,



Peggy Johnson
30 Lafayette St.
Portland, ME 04101

bring the full extension up to FRA standards, or to remove the track and ballast entirely, so that the city is not left with an eyesore, should the MNGRR fail financially.

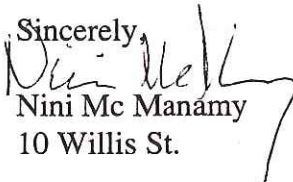
Finally, I believe there are safety questions about the railroad. As a taxpayer, I have concerns about the city's exposure on this project, after talking with Maine DOT staff. This railroad is totally unregulated by the State of Maine, and is not likely to be regulated soon.

This past weekend, I observed several young children racing the train on their bicycles, over a period of about an hour. The train has no backup beepers, and I was startled when the train started to back up towards me. Even if rules are issued by the DOT, they will not cover train operation, which is done by amateurs. I also learned from the DOT that the Cutter St. crossing is not currently considered a public crossing, and will need to be petitioned and accepted by them in order for the city and state to enforce safe signalling and signage at that crossing. The railroad's intentions of blowing a whistle are not only annoying to residents, but totally inadequate for hearing impaired individuals, or summer drivers with windows closed, air conditioning on, and radio at high volume. I have placed such a request to the DOT on the agenda of the MHNO's next board meeting. Should you grant the permit sought, I urge you to ensure the city is free from any liability involved in the operation or in the imposition of additional state requirements, and that fences, backup beepers, and crossing signals are provided to warn pedestrians of the train and keep children away from the tracks.

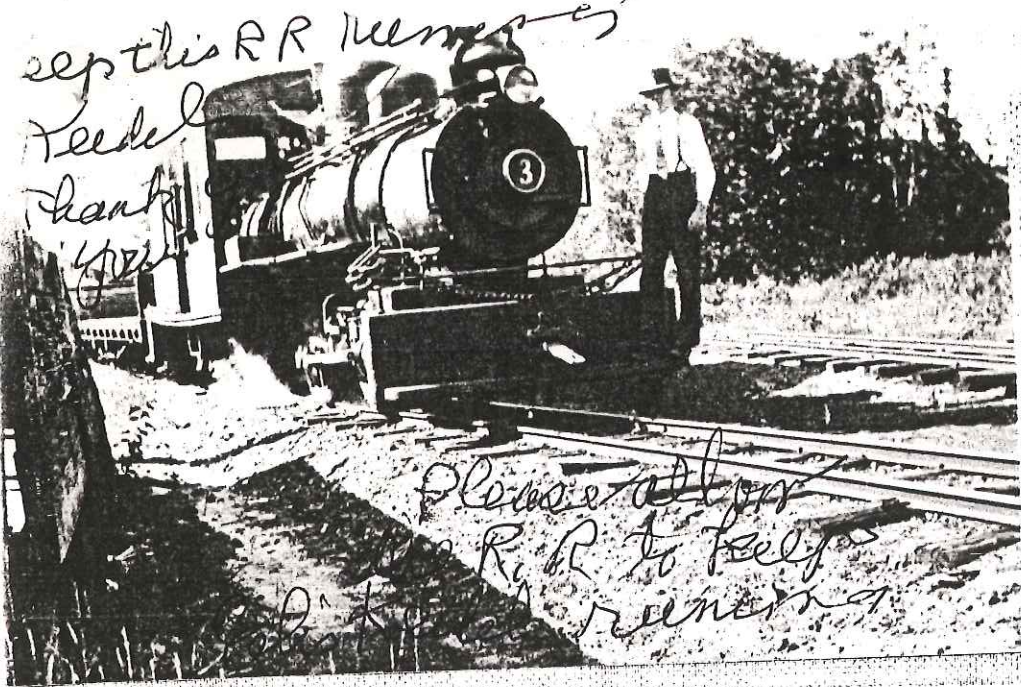
The track appears unsafe, and yesterday I requested a safety inspection from the DOT, as well as a copy of the written report. I was told that a safety inspection would be done, but that there would be no written reports. On page F-3 of the staff report, a letter from city staff ask the MNGRR for copies of DOT reports on the track. It is important for the city to understand that the DOT will produce no reports because, according to Alan Bartlett, it has no regulatory authority over ANY aspect of the railroad. Even in the proposed rules, the railroad would only be required self-inspect and self-report violations to the DOT, and inspections could be carried out by anyone with a "college-level course in railroad maintenance". I urge you to delay any further action on the requested permit until these issues are ironed out.

Thank you for your attention to these issues.

Sincerely,


Nini Mc Manamy
10 Willis St.

exp this RR memories
 Feeded
 thank
 you



Please allow
 RR to help
 rebuild

The Narrow Gauge Railroad Co. & Museum
 58 Fore St. Portland, ME 04101

Please permit
 the Narrow Gauge
 Railroad to extend
 its Track. IT is
 a delightful ex-
 perience and a
 treasure for the
 city of Portland!



Portland City Hall
 Planning Board, Chairman
 389 Congress Street
 Portland
 Maine
 04101



Jane Volin
 52 Falmouth Rd
 Scarborough, ME 04175
 Telephone: 893-1933
 locomotive No. 2 built in 1894 by Portland Co., at Albion.

The Narrow Gauge Railroad Co. & Museum
 58 Fore St. Portland, ME 04101

Further:
 Please keep the
 narrow gauge
 rail running - a
 real touch of
 history - and
 delight
 Sincerely
 Annette B
 Wee Wee

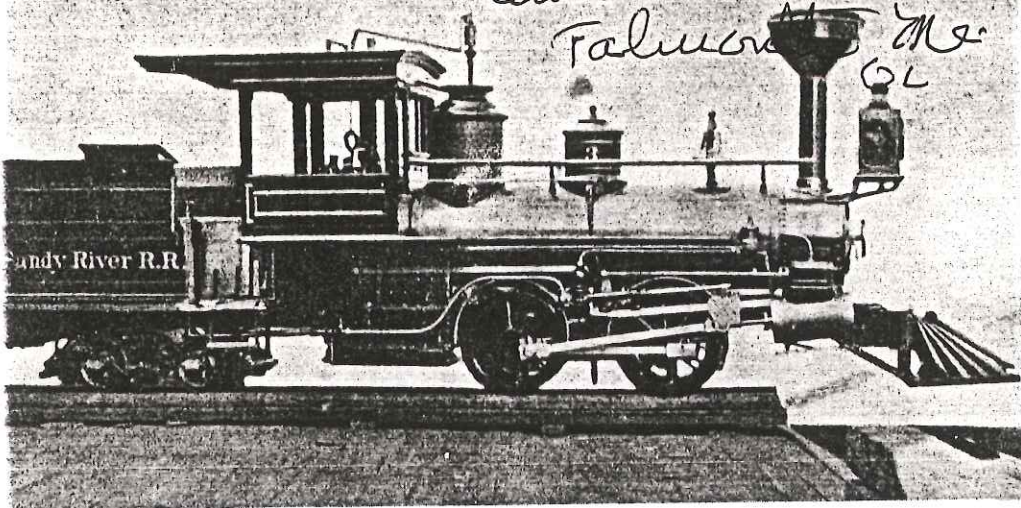


Portland City Hall
 Planning Board, Chairman
 389 Congress Street
 Portland
 Maine
 04101



Sandy River & Rangeley Lakes RR 1908-1935
 locomotive No. 18, a 2-6-2 built by Baldwin in 9/1893.
 shipped 9/1936.

Please Keep This R.R. running!
 Lets all the
 Falmouth Me
 GL



Maine Narrow Gauge Railroad Co. & Museum
 58 Fore St. Portland, ME 04101

Dear Sir:

This morning
 the residents of
 Ocean View Retirement
 Community visited the
 Maine Narrow Gauge RR
 Museum & had a
 ride on the train -
 feeling it was one of
 the most experiences ever!

Sincerely, P+D

Please keep

Kennebec Central RR 1890-1929
 locomotive No. 2, a 0-4-4 Forney built by
 Portland Co. 12/1890. Scrapped 1926.
 The train running so we can go back!



Planning Board, Chairman
 Portland City Hall
 389 Congress Street
 Portland
 Maine

04101

Maine Narrow Gauge Railroad Co. & Museum
 58 Fore St. Portland, ME 04101

Phebe Tonseth
Didrick Tonseth
Ocean View C-4
52 Falmouth Rd.
Falmouth, ME 04105



3/6/99 Portland City Hall
 Planning Board, Chairman
 389 Congress Street
 Portland
 Maine

04101

Please keep
 the trains
 running!
 P+D Tonseth

Bridgton & Saco River RR 1883-1941
 locomotive No. 2, built by Hinckley in 10/1882. Sold to
 W & F in 1907. Scrapped in 1912.

3/6/95



Maine Narrow Gauge
is a great addition.
to Portland - Do
Please let it extend
its tracks.

Portland City Hall
Planning Board, Chairman
389 Congress Street
Portland
Maine
04101

Barbara Mildram
Oceanview Apt. 109
52 Falmouth Road
Falmouth, ME 04105

933
07.



Enjoyed the
ride & stop.

Portland City Hall
Planning Board, Chairman
389 Congress Street
Portland
Maine
04101

Bob Adams

Sandy River RR 1879-1908
Builder's photo of No. 3, an O-4-4 built by Porter in
1883. Sold to Wiscasset & Quebec in 1893 as W & Q
No. 1. Scrapped 1914-16.



Please
keep the
Maine Narrow
Gauge R.R.
running!

Portland City Hall
Planning Board, Chairman
389 Congress Street
Portland
Maine
04101

Kingfield & Dead River RR 1893-1908
First pulp train over the K & DR July 1894. Pulled by
RR No. 4. Fred Hodgman, Charles French, Orlando
Arrell, and Frank Hodgman.

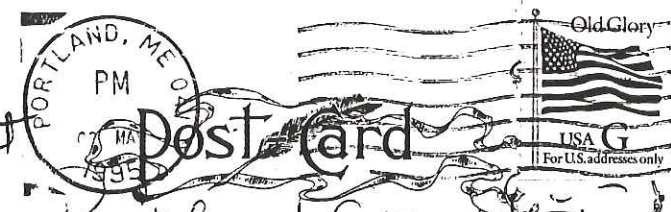
We love the
train -
please keep
them chugging
Joseph Wiggins



Portland City Hall
Planning Board, Chairman
389 Congress Street
Portland
Maine
04101

Monson RR 1883-1943
Locomotive No. 3 built by Vulcan in 1912. At Monson.
This locomotive is owned by the MNGRRCo. & M.

Please support
the maine
narrow gauge
railroad Co. &
museum.
Sincerely,



Portland City Hall
Planning Board, Chairman
389 Congress Street
Portland
Maine
04101

Edward R. Volin
Sincerely,
Edward R. Volin
Franklin & Megantic RR 1883-1908
Train at Bigelow about 1905 pulled by Sandy River RR
No. 5 (an O-4-4 Forney built by the Portland Co 6/1891)
pulling a Phillips & Rangeley RR coach, and a Franklin &
Megantic combine.

23 Mr Gray,
Thank you so much for the chance to comment on
the railroad: I am strongly opposed to it, because
I enjoy walking the dirt road along which the railroad
runs - and, I don't like hearing the whistle & bells
all the way up at my house, at 38 Munjoy St.

I wish they'd run it through the city, where
there is already traffic & noise
Sincerely, Kathleen McInerney
38 Munjoy St



MPX

16 February '95

Planning Board of the City
of Portland

Gentlemen:

I write to ask you to
grant whatever permits are
necessary for the furthering
of the development of the
Maine Narrow Gauge Railroad Co.
This is a most worthwhile and
effective way to bolster the
economics and cultural progress
of the city and surrounding area.

Sincerely,

Gladya A. Hager

52 Falmouth Rd.

Falmouth

Maine

04105

MAINE PRINTING COMPANY

102 Exchange Street • Post Office Box 3878 • Portland, Maine 04104

Tel: 207-774-6116 • Fax: 207-774-1302

Gary Hamilton
Portland Planning Office
Room 211, City Hall

FEB 14 '95
VED

FEB 14 1994
PORTLAND PLANNING OFFICE

Dear Mr. Hamilton,

As per our conversation regarding the Landscape Extension of Narrow Gauge R.R. I wish the Committee would wait until the snows are over, & the Railroad has run regularly during the warm months. Only then can we who live here determine what the long term effects of Coal dust will be. After all it was a combination of Coal dust & Fog that killed off a lot of Londoners in the 19th Century. Also I'm not going to be happy paying for Emissions testing & being polluted where I live —

I hope you will give this further consideration —

Sincerely,
Sylvia Morton
128 O'Brien St.
Portland Me.

Dear Sir

2-12-95

There was no problem with
the trail run and wish the
city would let the trains
it's been long enough now.

Thank you

Ann Kroff + Stan McLaughlin
310' Buoni St. Portland Me 04101

RECEIVED

FEB 14 1994

PORTLAND PLANNING OFFICE

SEBAGO METHODIC, INC.

BUSINESS MANAGEMENT SUPPORT • SOFTWARE ENGINEERING



P.O. BOX 909
WINDHAM, MAINE 04062
(207) 892-9717

CITY OF PORTLAND PLANNING BOARD
Room 209
City Hall
Portland, ME. 04101

June 20, 1994

>RE:Maine Narrow Gauge Railroad Co. & Museum

Gentlemen:

I wish to express my strong support for the exceptional vision, persistence and accomplishment represented by the referenced organization and its leader, Mr. Phineas Sprague.

While located in Windham, my business takes me to Portland almost daily, and I have been a charter supporter of the railway project. All summer long I observe, and often assist, visitors to our city arriving at the International Ferry Terminal and struggling on their own to negotiate Commercial Street and its hazards. By comparison with cities such as Seattle and San Diego, to name just two port destinations, we do a dismal job of greeting and directing our guests. If allowed to flourish as planned, this train could become an essential aspect of our image and hospitality.

The Maine heritage represented by this particular collection makes it especially compelling, and the financing and support assembled by Mr. Sprague exemplify precisely the private sector initiative most cities would be delighted to entertain.

Please don't let this tremendous achievement be for naught, and allow the Portland's rail age to proceed down the same dismal track as Union Station. I urge your prompt and favorable decision with respect to the needed track and operation.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Meredith S. Crandlemire".

Meredeth S. Crandlemire:
President

RECEIVED

JUN 22 1994

PORTLAND PLANNING OFFICE

An Ode to The Lilliput Railroad

TO: Jadiene R. O'Brien
Chairperson, Planning Board

FROM: Eva Horton

The Lilliput Choo-choo is home !
A tiny train, just the right size for little kids to ride on
What a thrill for children of all ages !
A learning experience
It's for families with young children
It's for older people who love history
It's for young lovers on their first date,
Something to do on a rainy day
For people who love Portland
It's for rail-buffs
It's for model railroaders
It's for schools,
It awakens imagination
It's for museum goers
It's for the child within us
It's a gift ! All from private donations
A public charity
It is an Economic Stimulus !
For cruise ship travellers
For the bus visitors
Romantic
Charming, unique, unforgettable
It's for the park
It's for pride
Maine ingenuity at its finest
It's a science experience
It's a window to our parent's childhood
It is Maine heritage, it's how we got here.
It's Union Station reclaimed
It's over a 100 years old
It's Norman Rockwell
It's the rythm of Maine transportation at its best
It's the musical sound of excited children
It's the gentle hiss of a tiny steam engine
It's an enegetic little chug
A cheerful whistle greeting
It is a colorful little train,
It's a Victorian Holiday
It's another reason to love Portland
It's an endangered species
It is in compliance with all enviromental laws
And all the State of Maine regulations
A slow, gentle ride
Is has an unblemished safety record for 46 years
55 million accident-free passnger miles !
It has licensed operators
It is run by dedicated experienced professionals
It is easy to lay the tracks
It is a manageable scale
It's an asset to Portland
It is world famous
It's like the trolley cars in San Francisco
A gift to visitors
Brings retail business to Portland
It's a barn-raising
It complements the Portland trail
The Lilliput has come home
And Eastern Promenade will be proud !!!



Eva Horton
Eastern Promenade, Munjoy Hill,
Portland, Maine 04101 6/21/94.

W. T. Chase
4621 Norwood Drive
Chevy Chase, Maryland
20815, U.S.A.

June 21, 1994

Jadine Obrien, Chairwoman
Portland Planning Board
389 Congress Street
Portland, Maine 04101

Dear Chairwoman Obrien,

I am presently a resident of Chevy Chase, Maryland. I came up with my mother, aunt, sister and two other friends to visit the Maine Narrow Gauge Railroad Company and Museum's Rail Fair last weekend. It was an outstandingly nice affair.

I hope that the Portland Planning Board will allow the Maine Narrow Gauge Railroad Company to place their temporary track on the Eastern Promenade. I believe that a steam narrow gauge railroad operation on the Portland waterfront will bring in many tourists who would otherwise pass Portland by, and should give a real boost to the economy in the waterfront area.

Sincerely,

A handwritten signature in dark ink, appearing to read "W. T. Chase". The signature is written in a cursive, slightly slanted style.

W. T. Chase

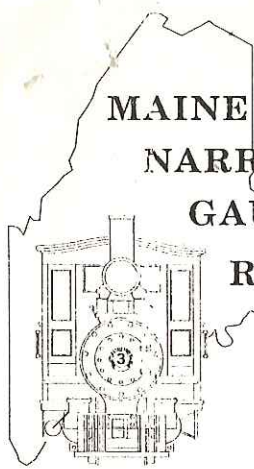
Cover sheet for letter FAX-ed to:

Portland City Planning Board
RE: Narrow Gauge Railroad

also copies via FAX to:

Casco Bay Weekly - attention Chris Barry
Maine Times - attention Andrew Weeger
George Campbell - Councilor for Monjoy Hill
Portland Trails - attention Alix Hopkins

3 pages including cover sheet



RAILROAD Co.
&
MUSEUM

58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

October 20, 1996

Mr. Joseph E. Gray, Jr.
Director, Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

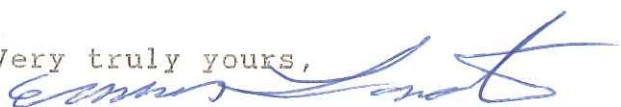
Attention: Richard Knowland

Reference is made to your letter of extension of the completion date of our main line track dated September 23, 1996, item #3. This letter will primarily address the coal/smoke situation. I hope to have a revised construct of current track construction within three weeks. As of October 20, there is only 1 switch and 160 feet of additional track to build to tie into the bridge. Ballasting should be completed upon completion of the track structure.

I would first like to make an apology. We modified our coal quite a while ago and although I mentioned it to Rick a couple of times, I apparently never sent the tests of the hard coal, nor told you of our changed firing practice as I had intended to.

We started to add hard coal to the soft coal we were burning to reduce the amount of visible omissions. We currently mix equal amounts of hard and soft coal which has resulted in exceptionally clean stack and economical firing in spite of the \$130 per ton cost, as low as 1.25 ton over the recent 3 day weekend. I am enclosing lab tests of both coals which indicate that the sulphur content of both coals is in the vicinity of 1.1%, well within the parameters recommended by Bill Petitejean. I have discussed what we are doing with him recently. He will look over our data and talk with me in Seattle Nov. 1. I anticipate a written report to follow. His initial reaction was that the use of the hard coal would help operating emissions. His initial recommendation on startup was to use compressed air in the forced draft blower pipe to clean up the wood fire emissions and possibly decrease firing time. A small change in piping will be required. I will forward a copy of his thoughts upon receipt.

Very truly yours,


J. Emmons Lancaster
Superintendent

P.O. BOX 63
BANNER, KY. 41603

(806) 874-9231

PRODUCER
ADDRESS

Lab No.
Date Rec'd. 10/18/94 - 10/28/94
Date Sampled 10/18/94 - 10/28/94
Sampled By At Deane, KY
Customer C. H. Sprague -
Stoker
Hazard #4
Other Temp. F.P.

- Tide #660
Size 4" x 0

CONFIDENTIAL

#660

SPECIFICATIONS

	% Volatile	% Fixed Carbon	% Moisture	% Ash	% Sulfur	% BTU
Rec'd.	35.21	49.78	5.28	8.66	1.07	12,921
Y Basis	37.17	52.55		9.14	1.13	13,641
M-Free						15,014

	SPECS	Fusion Temperature of Ash	SPECS	
Swelling Index No.	5	Initial	2743	°F
Indurability Index No.	45	Softening	2800	°F
Porine		Hemispherical	2800	°F
		Fluid	2800	°F

SCREEN ANALYSIS

SIZE	WT. (IN LBS.)	PERCENTAGE	CUMULATIVE PERCENT
+4"		1.12	1.12
4" x 2"		22.59	23.71
2" x 1 1/4"		29.43	53.14
1 1/4" x 3/4"		8.09	61.23
3/4" x 3/8"		9.21	70.44
3/8" x 1/4"		10.32	80.76
1/4" x 0		19.24	100.00

RECEIVED
11/10/94
GARY J. SMITH
SPRAGUE COAL DEPT.

TOTAL WEIGHT

Submitted By:

[Signature] Chemist



MINERAL LABS, INC.

Box 549

Salyersville, Kentucky 41465

Phone (606) 349-6145

Post-It™ brand fax transmittal memo 7671 # of pages >

To: <i>Emmons Lovander</i>	From: <i>Garry Smith</i>
Co: <i>MAKER</i>	Co: <i>SUBC</i>
Dept:	Phone #: <i>603 431 1000</i>
Fax #: <i>207 057 3293</i>	Fax #:

DATE OF ANALYSIS

Lab No. 150940780 3484

Date Rec'd. 9/25/95

Date Analyzed 9/25/95

Sampled By: #LAB Sample Type: AUTOMATIC

SAMPLE IDENTIFICATION AS SUPPLIED BY SAMPLER
 SUNNY KNOTT; 4 X 0; 152 CAR COMPOSITE
 9-8-95 THRU 9-21-95; 8D - WAREN
 1ST CAR #CSXT-388779, LAST CAR #CSXT-387720
 *OBSERVED AUTOMATIC SAMPLER
 CAR TOP SAMPLE FOR SCREEN ONLY
 PYRITIC SULFUR = 0.15%, CHLORINE = 0.12%

(D2961-93) % Moisture	% Ash D3174-93	% Volatile D3175-89a(1993)	% Fixed Carbon (Calculated)	B.T.U. D1989-93	% Sulfur D4239-94 (Method C)
As Rec'd. 5.34	8.53	XXX	XXX	12,842	.90
Dry Basis	9.01	XXX	XXX	13,566	.94
M.A.B.T.U. (Calculated)				14,909	

Free Swelling Index No. XXX
 D720-91
 Grindability Index No. 45
 D409-83a

-FUSION TEMPERATURE OF ASH- D1857-87 (1994)	Reducing		Oxidizing	
	Initial	Softening	Hemispherical	Fluid
	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX

SCREEN ANALYSIS D4749-87

SIZE	% WT. RETAINED
> 4	2.30%
4 X 2	17.12%
2 X 1 1/4	17.05%
1 1/4 X 3/4	18.29%
3/4 X 3/8	17.15%
3/8 X 1/4	5.97%
1/4 X 0	22.22%
	100.00%

WEIGHT DETERMINATION

Average Light Draft	X	X	X	
Average Loaded Draft	X	X	X	
Weight of Coal Loaded	X	X	X	Tons

RECEIVED
 9/25/95 Warren 95-4
 GARY J. SMITH
 SPRAGUE COAL DEPT.

Submitted By: *[Signature]*
 THIS DOCUMENT PROVIDED ON CONTROLLED STOCK PAPER, NOT VALUED IF ALTERED.



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

June 26, 1996

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

Attention: Richard Knowland

RE: Submissions to Planning Authority as spelled out in your letter of January, 1996


Dear Mr. Gray:

This is to advise that restrictions to the continued construction of our rail line beyond Cutter Street, requiring that the India - Fish Point portion of the railroad be completed will be met by the end of this week. This portion of the line has been ballasted except within the passing track area and those areas where additional ditching is anticipated. All cross-drains requested are in place, and the slopes opened up in yard construction are revegetated. In our discussions you indicated that completion of India passing track was not a pre-requisite. This siding is about half completed, but this area has not been ballasted. A major item completed this past weekend, in addition to the ballasting, is the removal of all piles of surplus earth materials. This material has been moved West of Cutter Street to grade the right of way in its wettest areas and to provide sub-grade for the passing track. You should also note that the track both sides of Cutter Street has also been ballasted to improve its appearance.

One specific item which you requested is the changing of some of the poorer ties. This project is currently under way and should be satisfactory by Monday, July 1. With that done, we expect to start construction at that time.

If you have any questions or comments about this report, please contact me.

Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations



BOND RIDER

To be attached to and form a part of Site Improvement

Bond No. 69025 Dated 3rd of October, 1995
TRUST FOR THE PRESERVATION OF MAINE INDUSTRIAL HISTORY AND TECHNOLOGY AND
MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM, 58 Fore Street, , as Principal, and
Portland, Maine 04101
FRONTIER INSURANCE COMPANY, as Surety, in favor of CITY OF PORTLAND, 389 Congress Street,
Portland, Maine 04101 , as Obligee.

It is understood and agreed that the Bond is changed or revised in the particulars as indicated below:

The bond total penalty is hereby increased to Thirty-Nine Thousand, Four Hundred, Fifty-Five and No/100 Dollars** (\$39,455.00), and the scope of the work is amended to include general site improvements and landscaping.

Said Bond shall be subject to all its terms, conditions, and limitations, except as herein expressly modified.

This Bond Rider shall become effective: June 15, 1995

IN WITNESS WHEREOF, **FRONTIER INSURANCE COMPANY** has caused its corporate seal to be hereunto affixed
this: 15th Day of June , 1995

FRONTIER INSURANCE COMPANY


Attorney-in-Fact
David H. Skillings

JUN 20 1995

POWER OF ATTORNEY

Know All Men By These Presents: That FRONTIER INSURANCE COMPANY, a New York Corporation, having its principal office in Rock Hill, New York, pursuant to the following resolution, adopted by the Board of Directors of the Corporation on the 4th day of November, 1985:

"RESOLVED, that the Chairman of the Board, the President, or any Vice President be, and hereby is, authorized to appoint Attorneys-in-Fact to represent and act for and on behalf of the Company to execute bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, and to attach thereto the corporate seal of the Company, in the transaction of its surety business;

"RESOLVED, that the signatures and attestations of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company when so affixed with respect to any bond, undertaking, recognizance or other contract of indemnity or writing obligatory in the nature thereof;

"RESOLVED, that any such Attorney-in-Fact delivering a secretarial certification that the foregoing resolutions still be in effect may insert in such certification the date thereof, said date to be not later than the date of delivery thereof by such Attorney-in-Fact."

This Power of Attorney is signed and sealed in facsimile under and by the authority of the above Resolution.

DOES HEREBY MAKE, CONSTITUTE AND APPOINT: **David H. Skillings Robert E. Shaw, Jr.**

of **Yarmouth**, in the State of **Maine**
 its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred in its name, place and stead to sign, execute, acknowledge and deliver in its behalf, and as its act and deed, without power of redelegation, as follows:

Bonds guaranteeing the fidelity of persons holding places of public or private trust; guaranteeing the performance of contracts other than insurance policies; and executing or guaranteeing bonds and undertakings required or permitted in all actions or proceedings or by law allowed; IN AN AMOUNT NOT TO EXCEED THREE MILLION FIVE HUNDRED THOUSAND (\$3,500,000.00) DOLLARS; and to bind FRONTIER INSURANCE COMPANY thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of FRONTIER INSURANCE COMPANY, and all the acts of said Attorney(s)-in-Fact pursuant to the authority herein given are hereby ratified and confirmed.

In Witness Whereof, FRONTIER INSURANCE COMPANY of Rock Hill, New York, has caused this Power of Attorney to be signed by its President and its Corporate seal to be affixed this **2nd** day of **June**, 19 **94**

FRONTIER INSURANCE COMPANY




BY: 
 WALTER A. RHULEN, President

State of New York
 County of Sullivan ss.:

On this **2nd** day of **June**, 19 **94**, before the subscriber, a Notary Public of the State of New York in and for the County of Sullivan, duly commissioned and qualified, came WALTER A. RHULEN of FRONTIER INSURANCE COMPANY to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of the Company, and the Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the Corporation, and that the resolution of the Company, referred to in the preceding instrument, is now in force.

In Testimony Whereof, I have hereunto set my hand, and affixed my official seal at Rock Hill, New York, the day and year above written.



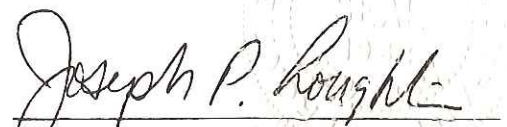

 CHRISTINE I. LANE
 Notary Public State of New York
 Sullivan County Clerk's No. 1996
 Commission Expires May 2, 1996

CERTIFICATION

I, JOSEPH P. LOUGHLIN, Secretary of FRONTIER INSURANCE COMPANY of Rock Hill, New York, do hereby certify that the foregoing Resolution adopted by the Board of Directors of this Corporation and the Powers of Attorney issued pursuant thereto, are true and correct, and that both the Resolution and the Powers of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the facsimile seal of the corporation this **15th** day of **June**, 19 **95**




 JOSEPH P. LOUGHLIN, Secretary



CITY OF PORTLAND
Planning and Urban Development Department

MEMORANDUM

TO: Distribution List Below

FROM: Richard Knowland, Senior Planner

DATE: May 11, 1995

SUBJECT: Maine Narrow Gauge Railroad Meeting
Tuesday, May 16, 1995, 1:00 p.m.
Department of Public Works Building, 55 Portland Street
Boothby Conference Room

Tentative Agenda

1. Discussion of timing and construction activities of the Railroad including logistics and coordination as they impact the Eastern Prom and East End Beach

* Cutter Street rail crossing

2. Stormwater and the beach - Is there a perceived problem with too much stormwater flowing across the beach?
3. Replacement of culverts

Planning Board condition - "The MNGR shall bear the cost of culvert replacement in the width of the 26' right-of-way at such time as the culvert is replaced by the City as part of the future work in the area."

4. Design of headwalls for the culverts
5. Appropriate replacement width of Munjoy Hill stormwater culvert
6. Other issues

Note: If there are other issues you would like to discuss, they can be added to the list.

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development
Alexander Jaegerman, Chief Planner
Kay Wagenknecht-Harte, Urban Designer
Michael O'Sullivan, Development Review Coordinator
Emmons Lancaster, Maine Narrow Gauge Railroad
Kathi Staples, City Engineer
Melodie Esterberg, Project Engineer
Larry Mead, Superintendent of Parks and Recreation
James Seymour, Sebago Technics
Tom Gorrell
Bruce Bell

Executive Department



Robert B. Ganley
City Manager

CITY OF PORTLAND

July 19, 1995

Mr. Phineas Sprague
Maine Narrow Gauge Railroad Company and Museum
58 Fore Street
Portland, Maine 04101

Subject: Cutter Street Crossing

Dear Mr. Sprague:

It has come to my attention that the Maine Narrow Gauge Railroad intends to install the Cutter Street crossing this Sunday, July 23, 1995. In order to best address both City and Maine Narrow Gauge Railroad interests, we propose to construct the crossing with City forces in conjunction with the Maine Narrow Gauge. We would like to work with the Railroad to coordinate City and Railroad uses with respect to the crossing and the Eastern Promenade Trail. It will take the Public Works Department approximately two to three weeks to resolve design issues, schedule a crew, and obtain the remaining necessary materials. Please work with Melodie A. Esterberg, PE, the project engineer for the Eastern Promenade Trail to finalize the details. She may be contacted at 874-8847.

Thank you for your cooperation.

Sincerely,
CITY OF PORTLAND

Robert B. Ganley
City Manager

RBG/MAE/me

pc: Nadeen M. Daniels, Assistant City Manager/Director of Public Works
W. J. Bray, Deputy Director
B. A. Bell, Operations Manager
K. A. Staples, PE, City Engineer
M. A. Esterberg, PE, Project Engineer
M. Theriault Conroy, Principal Traffic Engineer
J. E. Gray, Director, Planning & Urban Development
R. Knowland, Senior Planner
G. A. Flaherty, Director, Environmental & Intergovernmental Relations
D. Katsiaticas, Associate Corporation Counsel
Eastern Promenade Trail Building Committee

Executive Department



Robert B. Ganley
City Manager

CITY OF PORTLAND

July 19, 1995

Mr. Phineas Sprague
Maine Narrow Gauge Railroad Company and Museum
58 Fore Street
Portland, Maine 04101

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CITY OF PORTLAND

Robert B. Ganley
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M. Theriault Conroy, Principal Traffic Engineer
J. E. Gray, Director, Planning & Urban Development
R. Knowland, Senior Planner
G. A. Flaherty, Director, Environmental & Intergovernmental Relations
D. Katsiaficas, Associate Corporation Counsel
Eastern Promenade Trail Building Committee

3D absolves from any responsibility for permitting and outflow

~~Monday, Tuesday~~

SETUP M66FIR following week May 15, 16 ~~17~~

Talk to Alice

PROFILE two inches from the top of the tie Emmans says it works much better than for drainage purposes

Carco trap if its repair

See if they can unplug

We will write an understanding note for this. Talk to Jim. any alteration to the parking should address drainage

bedding of the culvert pipe > wants clean gravel

talk to headwell about the crown profile of the headwell

Mungy Hill storm drain look at replacement ^{cul width} ~~24"~~ ^{24"} may be more suitable

Jim add in some rip rap at inlets with loam + sand

Emmans will put conduit under the paving at the crossing

coordinating stormwater with the beach

crossing and drainage coming down the hill to the beach

DPW + DPN IN TOWN A PERCEIVED STORMWATER PROBLEM AT THE BEACH

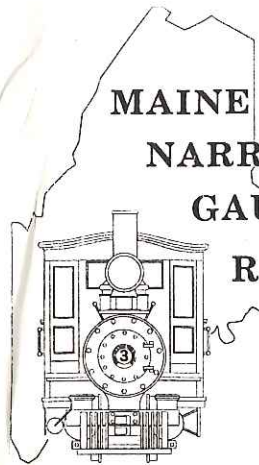
E+S is being taken care of by the slope (Portland House)

(4)

Jim add in ^{ref} (to) notes at locations of work and
ref them on each sheet

Jim show sewerline structure

interface between tracks and trail



**MAINE
NARROW
GAUGE
RAILROAD Co.
&
MUSEUM**

58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

May 16, 1995

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

RE: Submissions to Planning Authority as spelled out in your letter of March 29, 1995

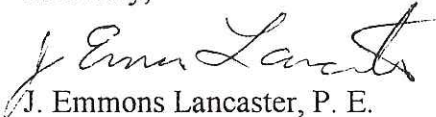
Dear Mr. Gray:

Attached please find submissions as requested by motions of the Planning Board regarding our installation and use of trackage India Street to Back Cove Draw Bridge. In this letter are the following:

1. iv. Operations Plans (includes noise) (4 items)
- v. Financial statement as of December 31, 1994.
- x. Emergency Procedure Plan

Other requested submissions will be forwarded ad completed.

Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations

MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM

OFFICE OF THE GENERAL SUPERINTENDENT

GENERAL SUPERINTENDENT'S BULLETIN #8

December 14, 1994

NOTICE

Except as directed by proper official or bulletin order, the use of Locomotive horn or whistle is prohibited except in emergency situations. This includes automobile horns applied to track equipment.

Except as directed by proper official or bulletin order, use of bells shall be limited to areas where the public is present, and when starting the locomotive at any time. Bells with particularly sharp penetrating sound shall be muffled in such a manner to provide safe, non-obtrusive warning.

J. E. Lancaster
General Superintendent



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

May 16, 1995

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

RE: Submissions to Planning Authority as spelled out in your letter of March 29, 1995


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Other requested submissions will be forwarded ad completed.

Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations

MAINE NARROW GAUGE RAILROAD COMPANY

OPERATING PLAN

PHASE II

JANUARY 1, 1995

PURPOSE

The Phase II Operating Plan of the Maine Narrow Gauge Railroad Company is designed to move the Operations Department to a higher level of efficiency and professionalism while it expands and improves its physical operating area. It is further designed to expand policies and procedures to more adequately meet the needs of the Department and to alleviate problems identified during our three weeks of operations.

Some of the identified areas most needing attention are listed below with expected action as developed to date. Further action on these and future issues will be addressed on a similar basis.

- **RECORDKEEPING**

It is in the best interest of the Maine Narrow Gauge Railroad Company and Museum to separate all Operating Department paperwork and finances from those of the Museum and Store.

With this in mind, it will be necessary to establish more stringent recordkeeping requirements, policies and procedures. An analysis of current recordkeeping procedures is in progress with new policies, procedures and forms to be developed. Volunteers affected by these changes will be advised and trained when necessary. Simplified forms will be developed whenever it is possible to simplify and still maintain the level of reporting necessary to maintain the separation of information.

- **TRAINING**

Volunteer training will resume as soon as possible on a regular basis. Due to the need to deviate from the previously established program in order to train the largest number of people in the crafts most urgently needed to lay track and begin operations, it must be documented that each volunteer has attended the classes required by his/her positions and training must be provided to fill areas where training sessions were missed by individuals, where individuals have taken on added responsibilities or where new people need training. The information on attendance sheets is being recorded, areas of needed training identified and the program will proceed as soon as classes to meet the most urgent needs of the railroad and the volunteers can be scheduled.

ACCOUNTABILITY

During our three weeks of operation, it was evident that additional guidelines for accountability must be developed for the safe, smooth and professional operation of our railroad. In response to this need the following actions will be taken.

Key people will be identified and asked to accept added responsibilities. While the volunteer's prerogative to maintain his/her personal life with as little interference from the railroad as possible is understood, the railroad must, in some cases, ask for a commitment in order to maintain the required level of service to our patrons.

Although individuals have personal responsibilities, which often must take priority, a flexible scheduling system will help maintain a crew level sufficient to allow the railroad to operate. We will attempt to put in place a scheduling system which will meet both the needs of volunteers and the requirements of the railroad.

This system will, at the very least, provide for backup volunteers to avoid calling a small number of people, who already provide a great deal of support, as the first on the list to fill in during every emergency situation. The system will also address the need to develop and train additional personnel on an ongoing basis.

CONSTRUCTION

With Phase I of our construction project nearly complete, we must now begin preparations for the next phase, completion and extending of current trackage.

Immediate attention will focus on the completion of the track from India Street to Fish Point. There remain several areas needing attention and "smoothing up" in addition to several hundred feet of additional track which can be put in place before reaching the limit of our current authority to construct.

There is also the need to construct much needed yard facilities, passing tracks, and an urgent need to provide good storage facilities for construction and maintenance materials and tools.

We need to search the right of way and our yard areas for useable materials and to store them properly. Both areas also need policing action to remove trash and salvage materials. A reasonably neat and orderly right of way will enhance our riders' experience and will be evidence to those who regulate our activities of our level of responsibility and commitment.

In addition to the right of way, we must begin to contain our operation and not expand beyond our lease limits or interfere with the areas designated for use by others. It is imperative that volunteers are made aware of the limits of our leased area and that all railroad materials and operations are conducted within this boundary. An updated

operations site plan should be prepared. While a certain amount of "trial and error" is always expected, we must begin efforts to be good neighbors and responsible tenants.

Although we do not yet have permission to continue track construction beyond our initial area (until trail plans are more fully developed), it is not too soon to begin to identify sources of materials and volunteer labor available for another "push". We need adequate materials on site or "reserved" as soon as feasible. These actions will allow us to extend our track as soon as we are given authority to do so.

- **INTERPERSONAL RELATIONSHIPS**

Despite the fact that we are all working toward the same goal, some interpersonal problems are bound to surface. Working within the boundaries of this knowledge, a procedure will be developed to handle these problems in a constructive manner. The program will begin by recognizing the value of each volunteer, the fact that volunteers have varying abilities, personal physical ability levels, areas of expertise, areas of interest and time constraints. Volunteers will be asked to recognize that the railroad also has needs.

The co-operation of EACH VOLUNTEER in seeing that both the needs of EACH volunteer AND of the railroad are met is critical to meeting our goals. We will be asking that everyone work as a team and show respect to every other volunteer. We will be asking that any disagreements between individuals be handled in as unobtrusive a manner as is possible. It is of the utmost importance that loud verbal disagreements between volunteers or negative opinions concerning railroad policy or other volunteers not take place in an area where patrons may be present. Our patrons deserve a pleasant experience when they visit us and every effort must be made to preserve this experience for them.

The program will recognize the need for those given supervisory responsibilities to request assistance from any qualified and able volunteer reporting to them to perform a particular needed task. It will also recognize the volunteer's right to refuse "for cause" or to suggest an alternative to performing the task as suggested.

The program will address procedures to follow if someone is unable or unwilling to perform a requested task or if a volunteer feels that he/she is being asked to work in an unsafe or illegal manner. A copy of these procedures will be made available to any volunteer who requests one.

- **SAFETY**

While knowledge of the legal and compliance issues surrounding operation of the railroad do not ordinarily fall to the volunteer, we will be asking for the assistance of every volunteer in refraining from actions which might create a safety, legal or liability problem for the railroad. Our training courses emphasize safe methods for the performance of duties and we expect volunteers to follow the instructions and rules as well as to apply

common sense to each situation. A dedication to work safety is the most important way in which each volunteer can help us maintain a safe railroad in compliance with all laws. In addition to working safely, each volunteer should make it a personal goal to see that any potential safety issue is immediately brought to the attention of the General Superintendent. Volunteer assistance is crucial in identifying safety problems.

Patron safety is also of the utmost importance. As patrons often do not realize the safety issues involved in railroading, volunteers must be ready to assist them.

- **TRAIN OPERATIONS**

Although train operations personnel have functioned very well, there are a few adjustments needed and additional training required for future expansion of service. These will be addressed and training scheduled as required.

- **COMMUNICATIONS**

The responsibility for effective communication lies with each individual volunteer. Communication needs (types of information and the personnel needing specific information in a timely manner) and procedures for effective communication of this information will be addressed. Current methods of communication (Superintendent's Bulletins, etc.) will be evaluated and adjusted as required.

MAINE NARROW GAUGE RAILROAD COMPANY

INTERIM OPERATING PLAN

GOAL:

To operate 7 days per week through mid-December (18th)

Schedule and Equipment

- Weekdays - Two (2) trains per day using Railbus or Engine #14 and caboose
- Weekends - Three (3) trains per day using Diesel equipment (Possibility of steam December 3 and 4 if approved by Mechanical Department.

Train Departure Times

- Weekdays - 11:00 AM and 2:00 PM (Possibility of later trips if warranted)
- Weekends - 11:00 AM, 1:00 PM, and 2:30 PM (Possibility of later trips if warranted))

Equipment Available

- Locomotive #3
- Locomotive #1
- Locomotive #14
- Railbus
- Handicap Combine #12 (needs handicap equipment, queen post blocks, truss rods, painting and lettering)
- Coach #19 (needs lettering and seats)
- Cars #24 and #25 (ready for service)
- Caboose #553 (needs floor repairs, painting and lettering)

Crews

For December 1994 operations
Locomotive:

(Identified personnel, not confirmed, not limited to)

Weekends: Hallett, Bradford, Knight, Hall, Campbell, Ashley, Paras

Weekdays: Googins, Lancaster, Bunker

Car Attendants:

(Identified personnel, not confirmed, not limited to)

Weekends: E. MacDonald, J. Rossi, S. Sondheim, B. Thompson, J. Wendt and weekday crew.

Weekdays: W. Leavitt, A. Leavitt, F. Andrews, F. McKay, D. Googins, R. Wilson, J. Wendt, R. Norton, E.B. Robertson, D. Robertson, H. Connell, L. Brown, D. Gordon, J. Gordon, E. Stevens, G. Thompson and others.

Track Inspectors:

Track to be inspected twice weekly; additional inspection as warranted by conditions.

(Identified personnel, not confirmed, not limited to)

J. E. Lancaster, W. Leavitt, G. Small, P. Tracy, A. Houghton, M. Hall, L. Perkins

Ticket Sales:

Ticket sales to be made in museum on temporary basis (plans for later ticket sales booth). Will use separate cash box, one ticket seller to be responsible for daily report.

(Identified personnel, not confirmed, not limited to)

Ticket Sellers: A. Leavitt, D. Googins, C. McCracken, other museum personnel.

Hours of Service:

Rest periods and hours work to conform with "Hours of Service Law", maximum of 12 hours, appropriate records to be kept and turned over to General Superintendent.

Duties of Employees/Volunteers

Track Crew

Provide track inspection and repair a minimum of two (2) days per week. Complete necessary reports of inspection and turn over to General Superintendent. Provide response to operating crews for repairs to "soft spots", etc. as needed. Provide additional inspection and repair in cases of flood, heavy rain, extreme high tides, fire, derailments, etc.

Engine Crews

Total fueling, maintenance, operation and inspection within hours of service, Split shifts. Reporting time to be one (1) hour prior to first train for switching service; earlier as required for above. Off duty after put-away and cool down. Furnish and wear traditional engine crew garb. Necessary daily reports to be completed and turned over to General Superintendent.

Train Crews

Car inspection, car cleaning, check first aid kit, assist loading passengers, provide on-car narrative, provide backup signals as required, detrain passengers, punch tickets, count passengers, maintain train sheet. Subject to hours of service. Equipment requirements - furnish and wear traditional "hard hats", dark slacks, light shirts/blouses, suit jackets with shells or buttons, ticket punch, pencil, clipboard, gloves (available), traditional shoes (safety shoes preferred), accurate watch. Report one (1) hour before first train for car cleaning and switching service. Off duty upon train put-away and tie down. Deliver trip records/train sheet to ticket seller. Minimum crew is one (1) crewperson for every two (2) cars.

Ticket Clerks

Check starting cash, check and record starting ticket numbers, check continuity of ticket numbers, sell tickets as required. After last train, record final numbers, balance ticket sales records, set up cash box for following day, contact conductor and complete daily trip and passenger count records, turn in revenue and records as instructed.

NOTE: Funds collected from sale of tickets must be kept separate from museum funds. (This procedure will eliminate any possibility of having to add museum receipts to total revenue subject to revenue sharing provision of State Agreement). These funds are also not to be used as "Petty Cash"; other means to pay for such expenses will be provided.

Accounting and Recordkeeping

Receive cash and original reports from ticket sellers, train crews, track inspection and maintenance crews. Receipts to be deposited promptly into appropriate bank accounts. Check invoices for accuracy and purchase order/authorization, prepare checks for signature as required. Maintain Operating Department accounting system and recordkeeping requirements in accordance with State Agreement. Prepare and forward all necessary reports to MDOT and to Corporate Accountant (R. Wilson) for inclusion in Corporate books. Prepare reports for Board of Directors as required. Maintain safety compliance and training records as required. Coordinate with accountant to avoid duplication, to assure that all Operating Department expenses are recorded and/or prorated properly. Provide clerical support to General Superintendent of Operations.

Training

A comprehensive training program is in process. This program will provide training in the areas of safety (OSHA and Agreement requirement), safety of patrons, general railroading, specific job training, compliance issues (Americans with Disabilities Act, Emergency Preparedness, Sexual Harassment), Public Relations.

MAINE NARROW GAUGE RAILROAD AND MUSEUM

OPERATIONS PLAN

October 6, 1993

PREPARE MUSEUM FOR WINTER STORAGE

- Coordinate locations, etc. with D. Fletcher & E. Bickford
- Paint Floor
- Construct Storage Track
- Relocate Equipment Already Inside
- Relocate Outside Equipment to Inside

RAIL

- Training
- Acquisition
 - Locations
 - Quantity
 - Transportation Requirements
 - Removal Crews
 - Loading
 - Transportation
- Installation
 - Fence Relocations
 - Preliminary Grading
 - Additional Material Acquisition (Ties, Spikes, etc.)
 - Field Layout
 - Track Laying

TRAINING

- General Safety Training
 - General Railroad Safety
 - Trackman Safety Program
 - Motor Car Operations Training
 - Trackmans Training (General)
 - Brakeman Training
 - Operating Rules
 - Safety Rules
 - Testing
 - Equipment Operation Training and Qualification

BUILD

- Transfer Table
 - Design

- Survey Layout
- Excavation
- Pit Wall Construction
- Track Laying
- Transfer Table Assembly

- Turntable
 - Site Selection
 - Design
 - Construction
 - Site negotiation

MANAGEMENT PROBLEMS

- Establish Track Inspection Program
- Obtain Track Inspector
- Rules
 - Establish Rulebook (Operating)
 - Establish Rulebook (Safety)
 - Arrange for exams
- Establish Timetable (Employee)
- Establish Passenger Safety Rules
- Ticketing
 - Establish procedures and rates
 - Design Tickets
 - Obtain Tickets
 - Establish Accounting Rules for Tickets
 - Ticket Booth
 - Provide Train Crew Ticket Taking Instructions
- Establish Radio Equipment Network
- Radio Rules
- First Aid
 - Ticket Office
 - Benches
- Establish Monday night training - handouts-attendance list
- Establish Alternate Training Schedule
- Obtain copies of 49CFR for Locomotives and Cars

DISABILITIES ACT CONFORMANCE

- Selection of Disabled Cars
- Provide Wheelchair Ramp
- Wheelchair locks for cars
- Obtain Copy of Law
- Emergency Equipment
- First Aid Box

LOCOMOTIVE ENGINEER CERTIFICATION

- Route

- Air Brake
- Steam Boiler Operations (High pressure license)
- Diesel Electric
- Train Operating Rules
- Daily Inspection Reports

INSPECTION PIT

TARP ON A FRAME

MAINTENANCE

- Equipment (Railroad)

MAINE NARROW GAUGE RAILROAD AND MUSEUM
 UNAUDITED
 BALANCE SHEET
 DECEMBER 31, 1994

ASSETS

CASH - CHECKING		2,615.61
CASH - FOUNDERS ACCOUNT		8,531.42
CASH - RAILROAD		4,835.00
PREPAID EXPENSES		3,790.77
INVENTORY - GIFT SHOP		10,468.47
INVENTORY - MATERIAL		14,907.62
TRAIN EQUIPMENT	1,392,718.00	
LESS DEPRECIATION	<u>116,216.00</u>	1,276,502.00
TRACK	2,615.00	
LESS DEPRECIATION	<u>136.00</u>	2,479.00
BUILDINGS	1,212.00	
LESS DEPRECIATION	<u>60.00</u>	1,152.00
FURNITURE & FIXTURES	1,832.86	
LESS DEPRECIATION	<u>148.00</u>	1,684.86
LEASEHOLD IMPROVEMENTS		92,663.63
START UP EXPENSES	14,650.27	
LESS AMORTIZATION	<u>1,692.13</u>	<u>12,958.14</u>
TOTAL ASSETS		<u><u>1,432,588.52</u></u>

LIABILITIES

ACCOUNTS PAYABLE		24,639.99
ACCOUNTS PAYABLE - RAILROAD		11.00
SALES TAX PAYABLE		28.64
STATE FEES PAYABLE		240.00
ACCRUED INTEREST PAYABLE		16,052.37
NOTE PAYABLE - BANKS		642,899.51
CITY		52,758.28
MEMBERS		67,000.00
B LIST PURCHASE		<u>329,718.00</u>
TOTAL LIABILITIES		1,133,347.79
RETAINED EARNINGS		<u>299,240.73</u>
TOTAL LIABILITIES AND RETAINED EARNINGS		<u><u>1,432,588.52</u></u>

MAINE NARROW GAUGE RAILROAD AND MUSEUM
 UNAUDITED
 INCOME STATEMENT
 DECEMBER 31, 1994

INCOME: MEMBERSHIPS		109,082.91
ADMISSIONS - RAILFAIR		4,886.45
ADMISSIONS - RR TICKETS		4,846.00
NEWSLETTER SUBSCRIPTIONS		428.00
FOOD & BEVERAGE SALES-EVENTS		2,039.00
BOOTH SALES- RAILFAIR		4,521.46
DONATIONS		31,576.17
NEWSLETTER AD SALES		635.00
GIFT SHOP SALES	22,669.24	
LESS COST OF GOODS SOLD	10,419.64	12,249.60
INTEREST INCOME		557.45
DONATIONS - MATERIAL & EQUIPMENT		<u>108,948.75</u>
 TOTAL INCOME		 279,770.79
 EXPENSES: NEWSLETTER PRINTING		 2,962.84
NEWSLETTER POSTAGE		1,311.57
NEWSLETTER MISC.		1,916.02
ADVERTISING - GENERAL		5,403.71
ADVERTISING - RAILFAIR		1,863.58
PROFESSIONAL FEES		678.58
LEASE STATE OF MAINE		208.33
ELECTRICITY		3,828.88
TELEPHONE		1,185.27
OFFICE SUPPLIES		445.79
POSTAGE		2,410.87
PRINTING		717.67
INSURANCE		9,864.44
LICENCES - FEES		1,941.87
MEMBERSHIPS & SUBSCRIPTIONS		123.00
INTEREST EXPENSES		65,918.33
AMORTIZATION EXPENSES		1,692.13
BANK CHARGERS		390.89
TAXES		7,416.50
REPAIRS & MAINT - BUILDINGS		915.30
REPAIRS & MAINT - EQUIPMENT		2,110.72
REPAIRS & MAINT - DISPLAYS		30.52
DEPRECIATION EXPENSE		81,523.00
FUEL - COAL		189.90
FUEL - GAS & DIESEL		210.40
FOOD & BEVERAGES		528.66
FOOD & BEVERAGES - EVENTS		2,581.26
RAILFAIR EXPENSES		4,968.89
MOVE FROM EDAVILLE		1,241.00
SECURITY B LIST		220.00
STATE REVENUE SHARING EXPENSES		240.00
MISC EXPENSE		<u>141.14</u>
 TOTAL EXPENSES		 <u>205,181.06</u>
 NET INCOME (LOSS)		 <u><u>74,589.73</u></u>

MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM

OFFICE OF THE GENERAL SUPERINTENDENT

GENERAL SUPERINTENDENT'S BULLETIN #8

December 14, 1994

NOTICE

Except as directed by proper official or bulletin order, the use of Locomotive horn or whistle is prohibited except in emergency situations. This includes automobile horns applied to track equipment.

Except as directed by proper official or bulletin order, use of bells shall be limited to areas where the public is present, and when starting the locomotive at any time. Bells with particularly sharp penetrating sound shall be muffled in such a manner to provide safe, non-obtrusive warning.

J. E. Lancaster
General Superintendent

MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM

EMERGENCY PROCEDURE PLAN

It is not realistically possible to foresee every type of emergency action or requirement necessary in case of accident or injury on Maine Narrow Gauge Railroad Company and Museum property. It is the intent of this plan to establish basic guidelines for response to any emergency where the welfare of our employees/volunteers or passengers is endangered, or company property is jeopardized.

Due to the possibility that some emergencies could involve up to 200 passengers, it is absolutely necessary that we have a contingency plan in place should the need arise. Information contained within this plan will allow for a unified and coordinated response to any and all emergency situations.

GENERAL PROCEDURES:

The attached map is an integral part of this plan. It identifies streets and roads adjacent to company property, and also identifies access points to all segments of the right of way. In an emergency situation, the Superintendent of Operations will be immediately notified of the situation by the fastest means possible. All response activities will be coordinated through that office, and the ONLY person authorized to release information to the news media and/or other outside sources will be the Superintendent of Operations.

PERSONNEL RESPONSIBILITIES:

Train Crew Personnel

A. Locomotive Engineer - The assigned engineer will establish and maintain communications with the Superintendent's office via radio, if equipment has not been disabled, or by other available means. Engineer will be responsible for on site decisions regarding continued movement of equipment.

B. Fireman - On consists assigned a fireman, it shall be his/her duty to assist the engineer in carrying out his/her duties. When equipment has been secured, and reliable communications have been established, Fireman will assist Conductor with the protection of passengers.

C. Conductor - The Conductor will be responsible for the safety and security of all passengers. All communications will be relayed via the Engineer to insure a prompt and accurate response to the emergency situation. Should evacuation of the train be necessary, passengers should be directed to a safe location out of harms way. Evacuations should be orderly to preclude

further injury and exposure. Trainmen and Car Attendants will assist Conductor as the situation requires. All crew members will remain calm, and act in a professional manner to allay passenger fears and concerns.

Crew will assist passengers as required, and report any injuries to the Conductor. Passengers will not be allowed to detrain unless directed by Conductor or Rescue Personnel. Crew will act in a professional manner, keep passengers calm, and await further instructions.

AT NO TIME will any crew member comment, or make statements via radio or on scene to anyone but a uniformed law enforcement official with regard to events leading up to the emergency in progress. Do not attempt to move equipment, silence a sounding crossing warning device, or relocate any physical evidence until so directed by appropriate authorities.

Crew members should attempt to secure witness information through the distribution of Witness Cards. As soon as possible after the incident, and while events are fresh in your mind, take a few moments to record your personal observations for future reference. Witness Cards and personal notes should be forwarded to the Superintendent of Operations.

Deadheading employees should assist wherever possible to minimize any problems related to the emergency situation. If all modes of communication fail, a messenger should be dispatched to the nearest available telephone to notify the Railroad of your situation and most immediate needs.

Station Personnel

A. Manager on Duty - Immediately notify local emergency response personnel via telephone using the 911 system. Should the emergency be of such magnitude so as to disable telephone service, a runner with a portable radio will be sent to notify the proper officials, and establish a communications link with the station. During normal hours of train operation, the Manager on Duty (if other than the Superintendent of Operations) will contact the Superintendent of Operations (Prime Emergency Response Manager) for further instructions. In the event that the Superintendent of Operations is unavailable, the Manager on Duty will attempt to contact (in order of listing) the next Response Manager from the Emergency Response Manager Call List. The Emergency Response Manager **WILL BE IN CHARGE** relative to decisions and staff actions regarding the emergency at hand. The Emergency Response Manager may be relieved or supplemented by the Superintendent of Operations (Prime Emergency Response Manager) as necessary.

All employees/volunteers will remain clear of the Ticket/Business Office and refrain from utilizing the telephones and radios unless directly involved with the response. Only information pertinent to the response will be passed over the radio. Employees will not discuss any information or prejudge the situation with anyone but a law enforcement official properly attired or presenting proper photo identification.

The Emergency Response Manager on Duty may delegate an assistant to answer the telephone and assist with communication activities. ERMD will also:

1. Notify General Superintendent.
2. Alert Shop & Track forces (per current list) of the situation, and coordinate a response as necessary.
3. As soon as possible compile a list of injured parties to include names, addresses, and phone numbers.
4. Compile a list of "call backs" with telephone numbers to include news media.
5. Prepare a Press Release as soon as possible so as to provide factual information in as positive a light as is possible.
6. Accomplish such telephone calls and duties as assigned.

Maintenance Personnel

- A. Shop and Track forces will secure the necessary manpower equipment, and supplies to respond to the situation. No one will respond to the scene until directed to do so by the Emergency Response Manager on Duty. Off duty employees will remain clear of the emergency scene unless directed to assist with the response.

EMERGENCY CHECKLIST

To Be Completed by Manager on Duty

The following checklist is designed as a guide for use in the event of an emergency. Completion of this checklist will insure that the proper actions are taken and then documented for future reference.

DATE: _____ **TIME:** _____

LOCATION (reference nearest landmark, milepost, structure)

NATURE OF INCIDENT (brief description):

EMERGENCY PERSONNEL REQUESTED:

_____ **TIME:** _____

_____ **TIME:** _____

EMERGENCY EQUIPMENT AND PERSONNEL DISPATCHED:

NOTIFICATION CALL MADE TO:

Police/Fire/Rescue	911	Time Called _____
General Superintendent	(207) 657-3293	Time Called _____

If unable to contact General Superintendent, attempt to contact the following Emergency Response Managers in the order of listing until able to contact one. Do not arrange for more than one Emergency Response Manager (additional responders will be contacted by On-Duty Emergency Response Manager as conditions warrant).

EMERGENCY RESPONSE MANAGERS

Charles Googins
Gilbert Wilcox

(207) 829-3317 (H)
(207) 829-6453 (H)

Checklist completed by: _____

Date _____

EMERGENCY CHECKLIST II

(TO BE USED BY EMERGENCY RESPONSE MANAGER ONLY)

AGENCY NOTIFICATIONS

AGENCY NOTIFICATION WILL ONLY BE MADE AFTER REVIEWING
ATTACHED CRITERIA TO CONFIRM REQUIREMENT.

Maine Department of Transportation:

Normal Business Hours (207) 287-2841 Time Called _____
Evenings/Weekends 1-800-482-0730 Time Called _____

Name of Contact _____

Maine State Police (State Response Center)

24 Hour Number 1-800-482-0730 Time Called _____

Name of Contact _____

Maine Department of Environmental Protection (Oil & Hazardous Material spills only)

24 Hour Number 1-800-482-0777 Time Called _____

Name of Contact _____

U. S. Coast Guard (Officer in Charge - Marine Inspection) (Oil & Hazardous Material spills only)

24 Hour Number (207) 780-3251 Time Called _____

Name of Contact _____

Clean Harbors (If situation warrants)

24 Hour Number (207) 799-8111 Time Called _____

Name of Contact _____

National Response Center (DOT, NTSB, Coast Guard) (Call local numbers first)

24 Hour Number 1-800-424-8802 Time Called _____

Name of Contact _____

National Transportation Safety Board (fatality or multiple serious injuries only) (within 2 Hours)

24 Hour Number 1-800-424-0201 Time Called _____

Name of Contact _____

Insurance Company Time Called _____

Name of Contact _____

LISTING OF MEDIA INQUIRIES:

<u>Caller</u>	<u>Phone #</u>	<u>Time Rec's/Time of Call Back</u>
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____
_____	_____	_____/_____/_____

Additional Comments:

Checklist completed by: _____

Date: _____

INSTANT PRESS RELEASE FORM

At _____, _____, Maine Narrow Gauge Railroad _____
(Time) (Today's Date) (Train Number)

carrying approximately _____ passengers was involved in a _____
(Number) (Type of Incident)

_____ at _____. Injuries are reported to be
(Location)

_____, and law enforcement/rescue personnel were immediately dispatched
(Major/Minor)

to the scene. Weather at the time of the incident was _____.
(Clear/Cloudy)

Further information will be released as it becomes available.

=====

Name of Spokesperson: _____

Date & Time of Initial Release _____

Information Released To: _____

Comments: _____

PROCEDURE

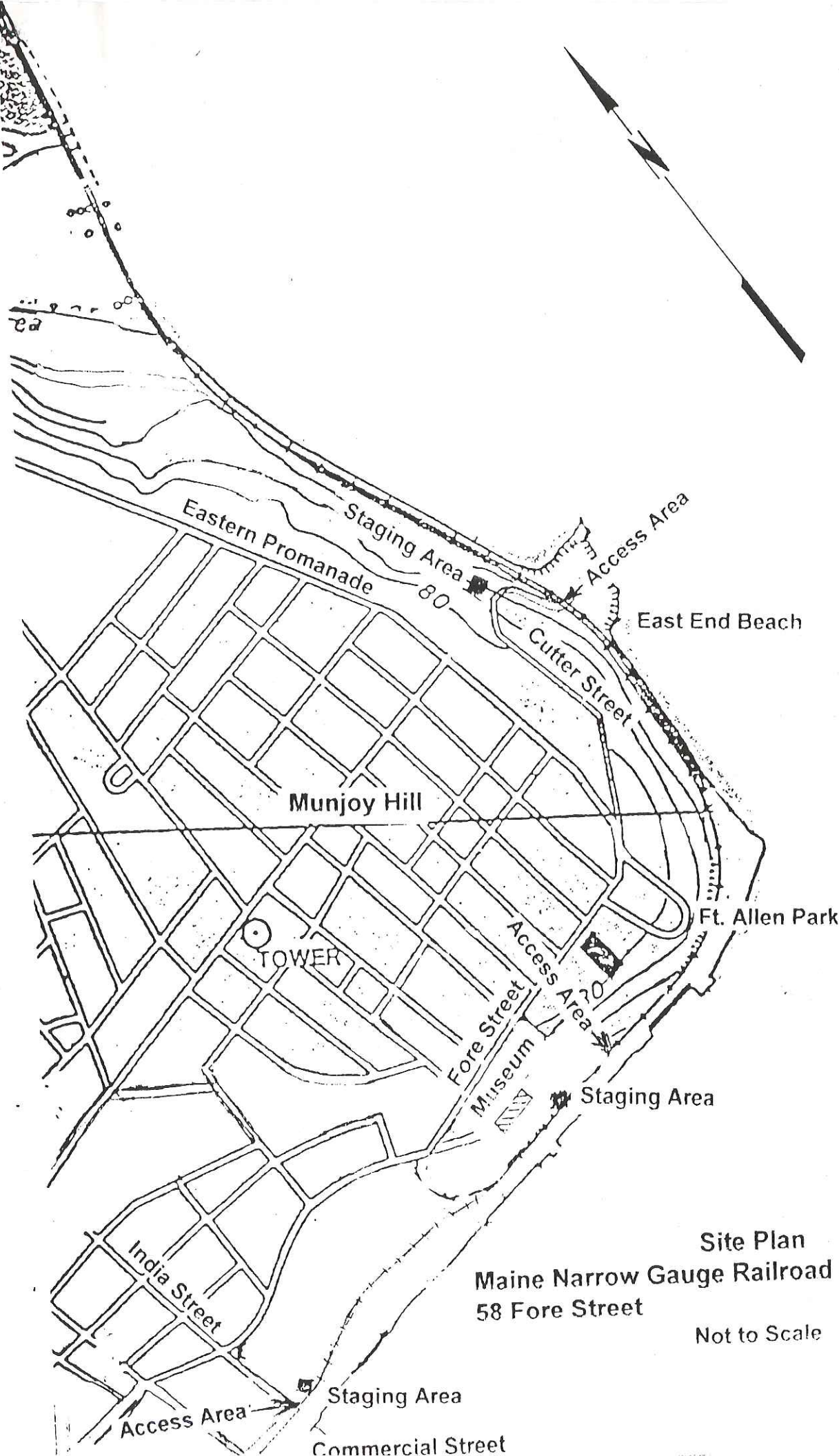
TO BE FOLLOWED IN THE EVENT OF A RELEASE/THREAT OF RELEASE OF OIL OR HAZARDOUS MATERIAL OR POLLUTING DISCHARGE BY THE MAINE NARROW GAUGE RAILROAD COMPANY & MUSEUM

1. IMMEDIATELY: Notify the Superintendent of Operations (Primary Emergency Response Manager). (Home phone 207 657-3293).

If unable to reach Superintendent of Operations, use Emergency Response Manager call list in order of appearance on list until a Response Manager is reached.

REPORT

- (A) The Location of the release/threat of release.
- (B) Petroleum products, although not considered by D.O.T. to be Hazardous Material, must also be reported.
- (C) If a release occurred, the quantity of spill by best estimate.
- (D) Approximate distance to nearest stream, body of water or swamp.
- (E) Can released material reach such stream, body of water or swamp.



Site Plan
Maine Narrow Gauge Railroad Co. and Museum
58 Fore Street
Portland, Maine
Not to Scale



NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C. 20594

SUMMARY OF ACCIDENT REPORTING REQUIREMENTS

"ACCIDENT" means any collision, derailment, or explosion involving railroad trains, locomotives, and cars; or any other loss-causing event involving the operation of such railroad equipment that results in a fatality to a passenger or employee, or in the emergency evacuation of persons.

WITHIN 2 HOURS

Notify the National Response Center (NRC) if the the accident results in:

1. A passenger or employee fatality or two or more crewmembers or passengers being injured seriously enough to require admission to a hospital;
2. The evacuation of a passenger train;
3. Damage to a tank car or container resulting in the release of hazardous materials or involving evacuation of the general public; or
4. A fatality at a grade crossing.

* * * * *

WITHIN 4 HOURS

Notify the NRC if the accident does not meet the above criteria but results in:

1. Damage estimated at \$150,000 or more in repairs (or current replacement cost) to railroad or nonrailroad property; or
2. Damage of \$25,000 or more to a passenger train including railroad and non-railroad property.

NOTIFICATION PROCEDURE

Telephone the NRC duty officer toll free at 1 800-424-0201

Give the following information

1. Name and title of person making the report.
2. Name of the railroad.
3. Description of the accident.
4. Casualties--number of fatalities and injuries.
5. Property damage estimate.
6. Name and telephone number of person from whom additional information may be obtained.



June 7, 1995

CITY OF PORTLAND

Mr. J. Emmons Lancaster
Maine Narrow Gauge Railroad Co. and Museum
58 Fore Street
Portland, ME 04101

Re: Maine Narrow Gauge Railroad

Dear Emmons:

We have reviewed your information faxed to the Planning Office on June 1st regarding the Maine Narrow Gauge Railroad and have the following comments. These comments follow the order of conditions specified in the Planning Board's approval of March 28th.

i. Petijean's Operational Recommendation

I would suggest that these operational recommendations and related coal specifications be referenced in one of your Superintendents Bulletins.

ii. Parking, Traffic and Pedestrian Analysis

Please work with Mary (Therriault) Conroy in developing the parameters of this project prior to initiating the study.

iii. Development Review Coordinator Condition

The erosion and sedimentation control notes should be referenced on each page of the plan. The invert evaluation of each storm drain with corresponding spot elevation along the length of the swale should be shown to assure positive drainage from the site.

A typical cross section of drainage swales that are proposed on sheets 4 and 5 should be shown on the plan. You could use the cross section on sheet 3 as a guide. The side slopes of the drainage swales shall not be steeper than a 2 to 1 slope.

A note shall be added to the plan indicating that all grading, erosion and sediment control methodology shall conform to the City of Portland Design and Technical Standards, and Best Management Practices handbook prepared by the Cumberland County Soil and Water Conservation District..

Please clarify what surface cover will be used adjacent to the track, (grass and or ballast?).

The following note shall also be added to the plan:

The applicant/property owner shall attempt to clean and unplug the catchbasin and connecting storm drain (which outlets directly to the harbor) nearest the museum building. The applicant/property owner shall confer with the Development Review Coordinator on the results of this work. If stormwater flow is re-established in the storm drain now or in the future, a casco trap shall be installed in the catchbasin meeting City of Portland specifications. The applicant/property owner shall also provide documentation to the Planning Office whether a permit is required from the U.S. Environmental Protection Agency. Re-establishment of this storm drain shall also require Planning Office review and approval of stormwater pre-treatment methods.

v. Noise Operation Plan

The submitted plan is acceptable.

v. Financial Capacity

The submitted information is acceptable.

vi. Hours of Operation and Passenger Train Trips

Superintendent Bulletin #13 is acceptable.

vii. Observed Air Emissions

This report will need to be submitted to the Planning Authority by the end of August 1995.

viii. Additional Trees

Please work with Jeff Tarling, City Arborist on this condition. He will work with you on specifying the specific type, size and location of the trees. He should be consulted with well in advance of any tree planting.

The approved site plan showed two existing trees on the site (westerly side) that were not present during our most recent visit to the site. Since the Planning Board's approval of the landscaping plan was based on the presence of existing vegetation, two additional trees will need to be planted in this area.

ix. Construction Schedule

This is acceptable. We will however want to have periodic updates of the construction schedule submitted to the Planning Office as previously discussed.

x. Safety and Emergency Evacuation Plan

I have previously forwarded comments from Lt. McDougall of the Fire Department to you. I infer from this material that the trains will be supplied radios for emergencies. Please clarify. Also will any of the personnel be trained in first aid?

Other Issues:

Track Cross Section

The track cross section should be the one that was approved by the Planning Board (see attachment A.) The cross section dated 5-31-95 would not be acceptable.

Turntable

We would prefer to defer approval of a turntable until more design work has been done on the trail so that we understand the physical relationship between the track, turntable and trail.

Bond Cost Estimate

We have reviewed the submitted cost estimate and found several items were missing. Stabilization of the drainage swales including loaming and seeding would total \$3,000. The parking wheel stops and stairs from Fore Street run about \$1,000. Four hundred dollars would be needed for the two missing trees. These changes would bring the total bond amount to \$39,455.

An inspection fee of \$422.53 will need to be forwarded to the Planning Office. This represents 1.7% of the net increase of the bond for site improvements.

Please revise the site plan and applicable submission documents so that the above comments are addressed.

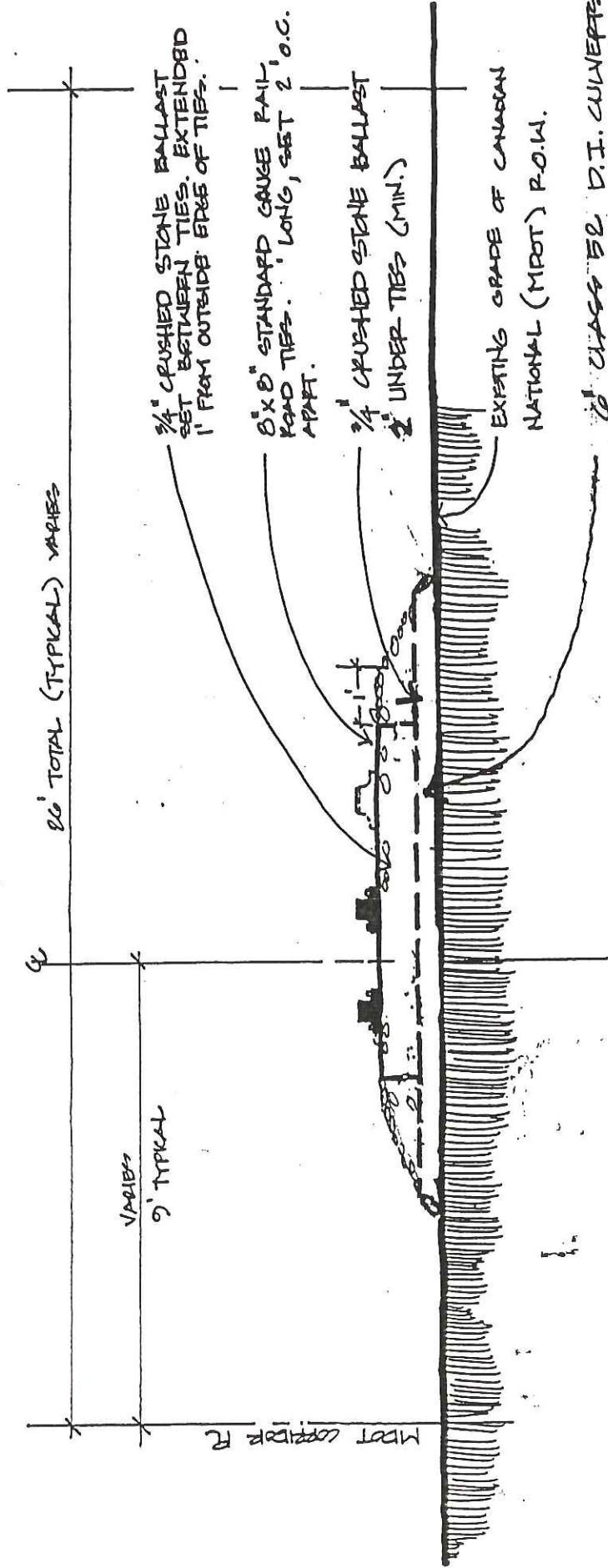
Should you have any questions concerning this letter, please call me.

Sincerely,



Richard Knowland
Senior Planner

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development
Alexander Jaegerman, Chief Planner
Michael O'Sullivan, Development Review Coordinator
Samuel Hoffses, Chief of Building Inspections
Jeff Tarling, City Arborist
Mary Conroy, Principal Traffic Engineer



TYPICAL TRACK CROSS SECTION

1/2"

LOCATIONS TO BE FIELD VERIFIED, ADD AS NEEDED AT LOW POINTS OR AS DIRECTED BY CITY ENGINEER.

USE THIS ONE

REV. 8/6/04

ATTACHMENT A

GIVEN TO DOBBINS,
6/26/95

DELUXE MEMOBOOK DISK

THE TRUST FOR THE PRESERVATION OF 1-95 52-60/112 1039
MAINE INDUSTRIAL HISTORY AND TECHNOLOGY
P. O. BOX 377
GRAY, ME 04039

JUNE 22, 1995

PAY TO THE ORDER OF CITY OF PORTLAND \$ 422.53

FOUR HUNDRED TWENTY-TWO AND 53/100 DOLLARS

KEY BANK Key Bank of Maine
Gray, Maine 04039 156

MEMO INSPECTION FEE J. Edmund L... MP

⑆011200608⑆ ? 012048783⑆ 1039

SAFETY PAPER



Smithwick & Clarke Insurance, Inc.

400 Commercial Street
Portland, ME 04101

Telephone: 207-761-1636
Facsimile: 207-761-2045

PHONE CONVERSATION 5/17/95
CONFIRMS WITH
DAVID SKILLINGS, THE INSURANCE
AGENT OF THE BOND CO, THAT
THE BOND WILL REMAIN IN
FORCE UNTIL THE PROJECT
IS SATISFACTORILY COMPLETED

March 27, 1995

Trust for the Preservation of
Maine Industrial History & Technology
58 Fore St.
Portland, ME 04101

RE: Bond

Dear Phin:

At your request, I have discussed the continuation of bond #69025 issued by Frontier Insurance on October 3, 1994. The company's agent, David Skillings, has confirmed that the bond remains in force until the project is completed and all parties are satisfied. When the bond was underwritten, we anticipated that 1.4 miles of track would be laid in conformance with the City of Portland's requirements for the roadbed.

Mr. Skillings can be reached in Yarmouth at 846-1559.

Best Regards,

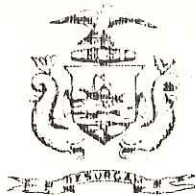
Howard B. Clarke
Howard B. Clarke

PHASE ONE BOND AMOUNT

Maine Narrow Gauge Railroad
Cost Estimate - Phase 1

1. Temporary Erosion Controls	
• 1,300 L.F. siltation fence @ 2.	\$2,600. ?
• 9 Haybale check dams @ 25.	<u>220.</u> OK
	2,820
2. Earthwork	
• Rough grading, 1,200 G.Y. @ 3.00/cy.	\$3,600. FOR TRACKS, YES
3. Storm Drainage	
• 6-9 ductile iron pipes, 6" x 15' @ 22/L.F.	1,980. NONE OF THE DRAIN PIPES INSTALLED
• Maintenance of existing pipes L.S.	200. ? NO
• Rip Rap of Storm Pipes L.S.	<u>1,500.</u> ? NO
	\$3,680.
4. Railroad Track Ballast	
• Provide and install	<u>8,500.</u> MAYBE 50% TO 60% IN PLACE
TOTAL	\$18,600.

INCLUDES WALKWAY AND CROSSING



CITY OF PORTLAND

January 11, 1995

Mr. Phineas Sprague
Maine Narrow Gauge Railroad Company
58 Fore Street
Portland, ME 04101

Re: Maine Narrow Gauge Railroad, 58 Fore Street

Dear Mr. Sprague:

I am responding to a recent letter requesting an extension for the temporary use and operation of the Maine Narrow Gauge Railroad tracks from India Street to Fish Point.

In my capacity as Director of Planning and Urban Development for the City of Portland and pursuant to the direction of the Planning Board, I am approving an extension of this temporary use to April 1, 1995.

If you have any questions concerning this letter, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Joseph E. Gray, Jr.".

Joseph E. Gray, Jr.
Director of Planning and Urban Development

cc: Alexander Jaegerman, Chief Planner
✓ Richard Knowland, Senior Planner
P. Samuel Hoffses, Chief of Building Inspections
Marge Schmuckal, Zoning Administrator
Stephen Mohr, Mohr & Seredin, 18 Pleasant Street, Portland, ME 04101

52-36/112

526

EXPLANATION	AMOUNT

The Trust for the Preservation of
 Maine Industrial History and Technology
 d/b/a The Maine Narrow Gauge Railroad Company
 58 Fore Street
 Portland, Maine 04101

Three hundred sixteen dollars twenty cents

CHECK AMOUNT

\$ 162.20

DOLLARS

CHECK NUMBER 526

DESCRIPTION

Inspection fee

TO THE ORDER OF

10/27/94 City of Portland

[Signature]
 James Spear

PORTLAND, MAINE
 Fleet Bank

⑆000526⑆ ⑆011200365⑆ 93541 91677⑆

RECEIVED 10-28-94



BOND RIDER

To be attached to and form a part of Site Improvement

Bond No. 69025 Dated 3rd of October, 1995
TRUST FOR THE PRESERVATION OF MAINE INDUSTRIAL HISTORY AND TECHNOLOGY AND
MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM, 58 Fore Street, _____, as Principal, and
Portland, Maine 04101
FRONTIER INSURANCE COMPANY, as Surety, in favor of CITY OF PORTLAND, 389 Congress Street,
Portland, Maine 04101 _____, as Oblige.

It is understood and agreed that the Bond is changed or revised in the particulars as indicated below:

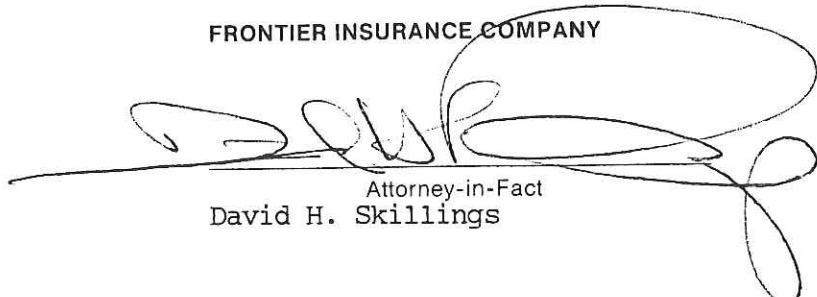
The bond total penalty is hereby increased to Thirty-Nine Thousand, Four Hundred, Fifty-Five and No/100 Dollars** (\$39,455.00), and the scope of the work is amended to include general site improvements and landscaping.

Said Bond shall be subject to all its terms, conditions, and limitations, except as herein expressly modified.

This Bond Rider shall become effective: June 15, 1995

IN WITNESS WHEREOF, FRONTIER INSURANCE COMPANY has caused its corporate seal to be hereunto affixed
this: 15th Day of June, 1995

FRONTIER INSURANCE COMPANY



Attorney-in-Fact
David H. Skillings

POWER OF ATTORNEY

Know All Men By These Presents: That FRONTIER INSURANCE COMPANY, a New York Corporation, having its principal office in Rock Hill, New York, pursuant to the following resolution, adopted by the Board of Directors of the Corporation on the 4th day of November, 1985:

"RESOLVED, that the Chairman of the Board, the President, or any Vice President be, and hereby is, authorized to appoint Attorneys-in-Fact to represent and act for and on behalf of the Company to execute bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, and to attach thereto the corporate seal of the Company, in the transaction of its surety business;

"RESOLVED, that the signatures and attestations of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company when so affixed with respect to any bond, undertaking, recognizance or other contract of indemnity or writing obligatory in the nature thereof;

"RESOLVED, that any such Attorney-in-Fact delivering a secretarial certification that the foregoing resolutions still be in effect may insert in such certification the date thereof, said date to be not later than the date of delivery thereof by such Attorney-in-Fact."

This Power of Attorney is signed and sealed in facsimile under and by the authority of the above Resolution.

DOES HEREBY MAKE, CONSTITUTE AND APPOINT: **David H. Skillings Robert E. Shaw, Jr.**

of **Yarmouth**, in the State of **Maine**, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred in its name, place and stead to sign, execute, acknowledge and deliver in its behalf, and as its act and deed, without power of redelegation, as follows:

Bonds guaranteeing the fidelity of persons holding places of public or private trust; guaranteeing the performance of contracts other than insurance policies; and executing or guaranteeing bonds and undertakings required or permitted in all actions or proceedings or by law allowed; IN AN AMOUNT NOT TO EXCEED THREE MILLION FIVE HUNDRED THOUSAND (\$3,500,000.00) DOLLARS; and to bind FRONTIER INSURANCE COMPANY thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of FRONTIER INSURANCE COMPANY, and all the acts of said Attorney(s)-in-Fact pursuant to the authority herein given are hereby ratified and confirmed.

In Witness Whereof, FRONTIER INSURANCE COMPANY of Rock Hill, New York, has caused this Power of Attorney to be signed by its President and its Corporate seal to be affixed this **2nd** day of **June**, 19 **94**.

FRONTIER INSURANCE COMPANY

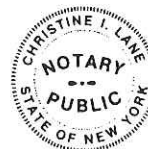


BY: 
 WALTER A. RHULEN, President

State of New York
 County of Sullivan ss.:

On this **2nd** day of **June**, 19 **94**, before the subscriber, a Notary Public of the State of New York in and for the County of Sullivan, duly commissioned and qualified, came WALTER A. RHULEN of FRONTIER INSURANCE COMPANY to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of the Company, and the Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the Corporation, and that the resolution of the Company, referred to in the preceding instrument, is now in force.

In Testimony Whereof, I have hereunto set my hand, and affixed my official seal at Rock Hill, New York, the day and year above written.





CHRISTINE I. LANE
 Notary Public State of New York
 Sullivan County Clerk's No. 1996
 Commission Expires May 2, 1996

CERTIFICATION

I, JOSEPH P. LOUGHLIN, Secretary of FRONTIER INSURANCE COMPANY of Rock Hill, New York, do hereby certify that the foregoing Resolution adopted by the Board of Directors of this Corporation and the Powers of Attorney issued pursuant thereto, are true and correct, and that both the Resolution and the Powers of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the facsimile seal of the corporation this **15th** day of **June**, 19 **95**.




 JOSEPH P. LOUGHLIN, Secretary

FRONTIER INSURANCE COMPANY
ROCK HILL, NEW YORK

BOND NUMBER: 69025

KNOW ALL MEN BY THESE PRESENTS, that We THE TRUST FOR THE PRESERVATION OF MAINE INDUSTRIAL HISTORY AND TECHNOLOGY AND MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM, 58 FORE STREET, PORTLAND, MAINE 04101, As Principal and FRONTIER INSURANCE COMPANY as SURETY, are held and stand firmly bound unto the CITY OF PORTLAND, 389 CONGRESS STREET, PORTLAND, MAINE 04101 in the sum of EIGHTEEN THOUSAND, SIX HUNDRED DOLLARS (\$18,600.00) for the payment which well and truly to be made the said Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has proposed to construct the following public improvements in the CITY OF PORTLAND, MAINE:

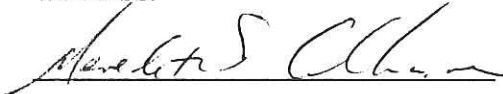
TEMPORARY EROSION CONTROL, EARTHWORK, STORM DRAINAGE,
TRACK BALLAST, MAINE NARROW GAUGE RAILROAD PROJECT, PORTLAND
MAINE

WHEREAS, the CITY OF PORTLAND, MAINE has approved said proposal conditioned upon the Principal filing a Surety bond with the obligee to guarantee completion of said improvements.

NOW, THEREFORE, the condition of this obligation is such that, if the above bounden Principal shall complete the aforesaid improvements to the satisfaction of the CITY OF PORTLAND, MAINE, then this obligation shall be null and void; otherwise shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 3rd day of October, 1994.

WITNESS:



TRUST FOR THE PRESERVATION OF
MAINE INDUSTRIAL HISTORY AND
TECHNOLOGY AND MAINE NARROW
GAUGE RAILROAD COMPANY AND
MUSEUM



FRONTIER INSURANCE COMPANY



ROBERT E. SHAW, JR.
ATTORNEY-IN-FACT

**Maine Narrow Gauge Railroad
Cost Estimate - Phase 1**

1. Temporary Erosion Controls	
• 1,300 L.F. siltation fence @ 2.	\$2,600.
• 9 Haybale check dams @ 25.	<u>220.</u>
	2,820
2. Earthwork	
• Rough grading, 1,200 C.Y. @ 3.00/C.Y.	\$3,600.
3. Storm Drainage	
• 6-9 ductile iron pipes, 6" x 15' @ 22/L.F.	1,980.
• Maintenance of existing pipes L.S.	200.
• Rip Rap of Storm Pipes L.S.	<u>1,500.</u>
	\$3,680.
4. Railroad Track Ballast	
• Provide and install	<u>8,500.</u>
TOTAL	\$18,600.

INCLUDES WALKWAY AND CROWING

*Back
to
file*

Planning & Urban Development



Joseph E. Gray Jr.
Director

June 7, 1995

CITY OF PORTLAND

Mr. J. Emmons Lancaster
Maine Narrow Gauge Railroad Co. and Museum
58 Fore Street
Portland, ME 04101

Re: Maine Narrow Gauge Railroad

Dear Emmons:

We have reviewed your information faxed to the Planning Office on June 1st regarding the Maine Narrow Gauge Railroad and have the following comments. These comments follow the order of conditions specified in the Planning Board's approval of March 28th.

i. Petijean's Operational Recommendation

I would suggest that these operational recommendations and related coal specifications be referenced in one of your Superintendents Bulletins.

ii. Parking, Traffic and Pedestrian Analysis

Please work with Mary (Therriault) Conroy in developing the parameters of this project prior to initiating the study.

iii. Development Review Coordinator Condition

talk with Melodie
The erosion and sedimentation control notes should be referenced on each page of the plan. The invert ^{elevation} of each storm drain with corresponding spot elevation along the length of the swale should be shown to assure positive drainage from the site.

A typical cross section of drainage swales that are proposed on sheets 4 and 5 should be shown on the plan. You could use the cross section on sheet 3 as a guide. The side slopes of the drainage swales shall not be steeper than a 2 to 1 slope.

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v. Noise Operation Plan

The submitted plan is acceptable.

v. Financial Capacity

The submitted information is acceptable.

vi. Hours of Operation and Passenger Train Trips

Superintendent Bulletin #13 is acceptable.

vii. Observed Air Emissions

This report will need to be submitted to the Planning Authority by the end of August 1995.

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Please work with Jeff Tarling, City Arborist on this condition. He will work with you on specifying the specific type, size and location of the trees. He should be consulted with well in advance of any tree planting.

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ix. Construction Schedule

This is acceptable. We will however want to have periodic updates of the construction schedule submitted to the Planning Office as previously discussed.

I-41 Jent.com
P.O. Box 377
612 04307

x. Safety and Emergency Evacuation Plan

I have previously forwarded comments from Lt. McDougall of the Fire Department to you. I infer from this material that the trains will be supplied radios for emergencies. Please clarify. Also will any of the personnel be trained in first aid?

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Track Cross Section

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An inspection fee of \$422.53 will need to be forwarded to the Planning Office. This represents 1.7% of the net increase of the bond for site improvements.

Please revise the site plan and applicable submission documents so that the above comments are addressed.

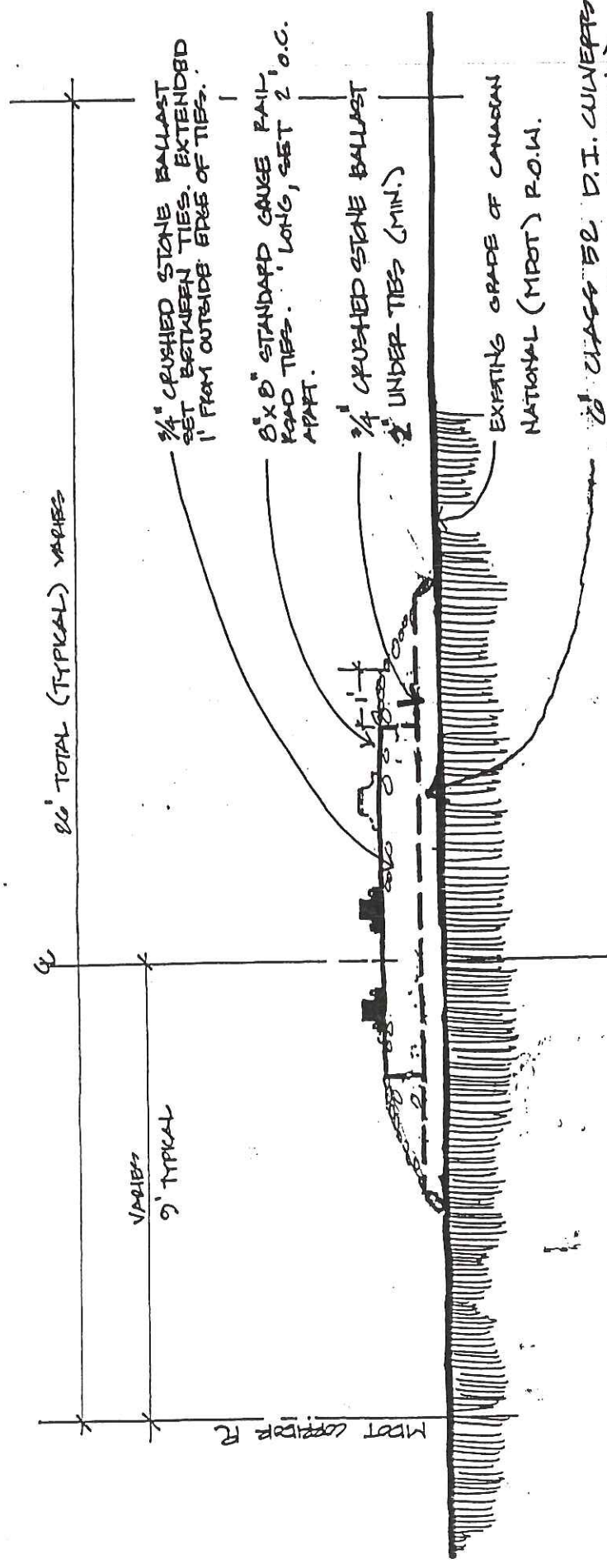
Should you have any questions concerning this letter, please call me.

Sincerely,



Richard Knowland
Senior Planner

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development
Alexander Jaegerman, Chief Planner
Michael O'Sullivan, Development Review Coordinator
Samuel Hoffses, Chief of Building Inspections
Jeff Tarling, City Arborist
Mary Conroy, Principal Traffic Engineer



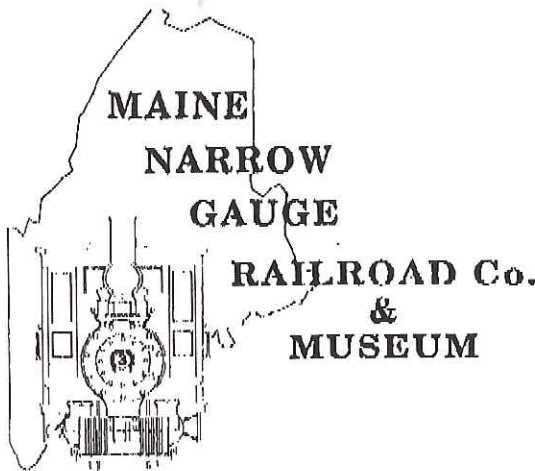
TYPICAL TRACK CROSS SECTION

1"=2'

LOCATIONS TO BE FIELD VERIFIED,
 ADD AS NEEDED AT LOW POINTS
 OR AS DIRECTED BY CITY
 ENGINEER.

USE THIS ONE

REV. 8/6/04



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

June 21, 1995

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

Attention: Richard Knowland

RE: Submissions to Planning Authority as spelled out in your letter of June 7, 1995

Dear Mr. Gray:

Attached please find submissions as requested by Planning Staff regarding construction of our trackage India Street to Back Cove Draw Bridge. These submissions are in addition to or supplement those submitted with my letter of March 16 and June 1, 1995. In this letter are responses written after a telephone conference with Mr. Knowland. Paragraph numbers refer to his letter of June 7, 1995.

- i. I will contact Bill Petijean for a concise summation of his recommendations which will be issued as a bulletin order as you have suggested.
- ii. Traffic study will be done on an ongoing basis.
- iii. a. Erosion and sediment control notes will be referenced on each page of the plan. City engineering personnel are presently designing the drainage required along the corridor. As this phase is expected to be complete this Fall, it premature to show on the plan other than that culvert elevations and sizes are to be determined at a later time. Likewise, the data on existing swales will be determined in this work in progress.
 - b. Typical swale cross sections will be added to Sheets 3 and 4.
 - c. Requested note will be added.

Joseph E. Gray, Jr.

June 21, 1995

d. At this time we plan to place a thin layer of ballast over areas adjacent to the track, but in areas where there is a wider area on the trail side, there may be loam areas as permitted by MDOT.

e. The suggested note will be added to Sheet 3.

v.-vii. These items are completed or in on-going progress.

vii. Revised existing tree locations are shown, as well as any not on plan and propose new tree locations. For the record, confirming our telephone conversation, our landlord has serious concerns about tree size and location as affects view of his waterfront yacht operation, his security camera and visual observations. He is also concerned about drainage plugging by fallen leaves.

ix. Updates of construction schedule will be filed

x. Emergency plan revised per Lt. McDougall's request is attached.


Track Cross Section: Cross section on sheet 5 is revised per that approved.

Bond Cost Estimate: Performance Bond revised to \$39,455 will be delivered to you by our insurance agent, Howard Clarke.

Inspection Fee: Inspection fee of \$422.53 is enclosed.

Please advise any further information required to obtain this permit. It is necessary to start at once in order to meet the unusual construction deadline

Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations

MOHR & SEREDIN

Landscape Architects, Inc.

TRANSMITTAL

Project: *Maine Narrow Gauge RR* Date: *6.22.95*

To: *Pick Knowlton
senior planner
City Hall
Portland*

From: *Tom Farmer
M&S*

Copy To:

Description:

*Additional revisions and supportive information for
the MNGR construction permit:
2 sets*

Message:

*As requested by MNGR we submit the plans
with revisions, Emergency Procedure Plan,
cover letter by Emmons Lancaster and the
required fee for City Inspection cost in the
amount of \$422.53.*

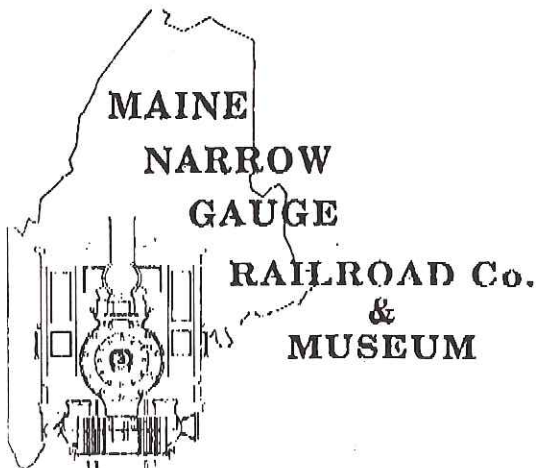
Mailed:

Delivered:

Fax:

Number:

No. of Pages (incl. cover page):



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

June 21, 1995

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Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

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Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations

MAINE NARROW GAUGE
RAILROAD COMPANY AND MUSEUM

EMERGENCY PROCEDURE PLAN

Revised June, 1995

MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM

EMERGENCY PROCEDURE PLAN

It is not realistically possible to foresee every type of emergency action or requirement necessary in case of accident or injury on Maine Narrow Gauge Railroad Company and Museum property. It is the intent of this plan to establish basic guidelines for response to any emergency where the welfare of our employees/volunteers or passengers is endangered, or company property is jeopardized.

Due to the possibility that some emergencies could involve up to 200 passengers, it is absolutely necessary that we have a contingency plan in place should the need arise. Information contained within this plan will allow for a unified and coordinated response to any and all emergency situations.

GENERAL PROCEDURES:

The attached map is an integral part of this plan. It identifies streets and roads adjacent to company property, and also identifies access points to all segments of the right of way. In an emergency situation, the Superintendent of Operations will be immediately notified of the situation by the fastest means possible. All response activities will be coordinated through that office, and the ONLY person authorized to release information to the news media and/or other outside sources will be the Superintendent of Operations.

PERSONNEL RESPONSIBILITIES:

Train Crew Personnel

A. Locomotive Engineer - The assigned engineer will establish and maintain communications with the Superintendent's office via radio, if equipment has not been disabled, or by other available means. Engineer will be responsible for on site decisions regarding continued movement of equipment.

B. Fireman - On consists assigned a fireman, it shall be his/her duty to assist the engineer in carrying out his/her duties. When equipment has been secured, and reliable communications have been established, Fireman will assist Conductor with the protection of passengers.

C. Conductor - The Conductor will be responsible for the safety and security of all passengers. All communications will be relayed via the Engineer to insure a prompt and accurate response to the emergency situation. Should evacuation of the train be necessary, passengers should be directed to a safe location out of harms way. Evacuations should be orderly to preclude further injury and exposure. Trainmen and Car Attendants will assist Conductor as the situation requires. All crew members will remain calm, and act in a professional manner to allay passenger fears and concerns.

Crew will assist passengers as required, and report any injuries to the Conductor. Passengers will not be allowed to detrain unless directed by Conductor or Rescue Personnel. Crew will act in a professional manner, keep passengers calm, and await further instructions.

AT NO TIME will any crew member comment, or make statements via radio or on scene to anyone except, uniformed or properly identified, Law Enforcement, Fire Department or other Emergency Agency personnel, with regard to events leading up to the emergency in progress. Do not attempt to move equipment, silence a sounding crossing warning device, or relocate any physical evidence until so directed by appropriate authorities.

Crew members should attempt to secure witness information through the distribution of Witness Cards. As soon as possible after the incident, and while events are fresh in your mind, take a few moments to record your personal observations for future reference. Witness Cards and personal notes should be forwarded to the Superintendent of Operations.

Deadheading employees should assist wherever possible to minimize any problems related to the emergency situation. If all modes of communication fail, a messenger should be dispatched to the nearest available telephone to notify the Railroad of your situation and most immediate needs.

Station Personnel

A. Manager on Duty - Immediately notify local emergency response personnel via telephone using the 911 system. Should the emergency be of such magnitude so as to disable telephone service, a runner with a portable radio will be sent to notify the proper officials, and establish a communications link with the station. During normal hours of train operation, the Manager on Duty (if other than the Superintendent of Operations) will contact the Superintendent of Operations (Prime Emergency Response Manager) for further instructions. In the event that the Superintendent of Operations is unavailable, the Manager on Duty will attempt to contact (in order of listing) the next Response Manager from the Emergency Response Manager Call List. The Emergency Response Manager WILL BE IN CHARGE relative to decisions and staff actions regarding the emergency at hand. The Emergency Response Manager may be relieved or supplemented by the Superintendent of Operations (Prime Emergency Response Manager) as necessary.

All employees/volunteers will remain clear of the Ticket/Business Office and refrain from utilizing the telephones and radios unless directly involved with the response. Only information pertinent to the response will be passed over the radio. Employees will not discuss any information or prejudge the situation with anyone but a law enforcement official properly attired or presenting proper photo identification.

The Emergency Response Manager on Duty may delegate an assistant to answer the telephone and assist with communication activities. ERMD will also:

1. Notify General Superintendent.
2. Alert Shop & Track forces (per current list) of the situation, and coordinate a response as necessary.
3. As soon as possible compile a list of injured parties to include names, addresses, and phone numbers.
4. Compile a list of "call backs" with telephone numbers to include news media.
5. Prepare a Press Release as soon as possible so as to provide factual information in as positive a light as is possible.
6. Accomplish such telephone calls and duties as assigned.

Maintenance Personnel

- A. Shop and Track forces will secure the necessary manpower equipment, and supplies to respond to the situation. No one will respond to the scene until directed to do so by the Emergency Response Manager on Duty. Off duty employees will remain clear of the emergency scene unless directed to assist with the response.

EMERGENCY CHECKLIST

To Be Completed by Manager on Duty

The following checklist is designed as a guide for use in the event of an emergency. Completion of this checklist will insure that the proper actions are taken and then documented for future reference.

DATE: _____ **TIME:** _____

LOCATION (reference nearest landmark, milepost, structure)

NATURE OF INCIDENT (brief description):

EMERGENCY PERSONNEL REQUESTED:

_____ **TIME:** _____

_____ **TIME:** _____

EMERGENCY EQUIPMENT AND PERSONNEL DISPATCHED:

NOTIFICATION CALL MADE TO:

Police/Fire/Rescue	911	Time Called _____
General Superintendent	(207) 657-3293	Time Called _____

If unable to contact General Superintendent, attempt to contact the following Emergency Response Managers in the order of listing until able to contact one. Do not arrange for more than one Emergency Response Manager (additional responders will be contacted by On-Duty Emergency Response Manager as conditions warrant).

EMERGENCY RESPONSE MANAGERS

Charles Googins	(207) 829-3317 (H)
Gilbert Wilcox	(207) 829-6453 (H)
Paul Sherr	(207) 885-5052 (H)

Checklist completed by: _____

Date _____

EMERGENCY CHECKLIST II

(TO BE USED BY EMERGENCY RESPONSE MANAGER ONLY)

AGENCY NOTIFICATIONS

AGENCY NOTIFICATION WILL ONLY BE MADE AFTER REVIEWING
ATTACHED CRITERIA TO CONFIRM REQUIREMENT.

Maine Department of Transportation:

Normal Business Hours (207) 287-2841 Time Called _____
Evenings/Weekends 1-800-482-0730 Time Called _____

Name of Contact _____

Maine State Police (State Response Center)

24 Hour Number 1-800-482-0730 Time Called _____

Name of Contact _____

Maine Department of Environmental Protection (Oil & Hazardous Material spills only)

24 Hour Number 1-800-482-0777 Time Called _____

Name of Contact _____

U. S. Coast Guard (Officer in Charge - Marine Inspection) (Oil & Hazardous Material spills only)

24 Hour Number (207) 780-3251 Time Called _____

Name of Contact _____

Clean Harbors (If situation warrants)

24 Hour Number (207) 799-8111 Time Called _____

Name of Contact _____

National Response Center (DOT, NTSB, Coast Guard) (Call local numbers first)

24 Hour Number 1-800-424-8802 Time Called _____

Name of Contact _____

National Transportation Safety Board (fatality or multiple serious injuries only) (within 2 Hours)

24 Hour Number 1-800-424-0201 Time Called _____

Name of Contact _____

Insurance Company Time Called _____

Name of Contact _____

LISTING OF MEDIA INQUIRIES:

<u>Caller</u>	<u>Phone #</u>	<u>Time Rec's/Time of Call Back</u>
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____
_____	_____	_____/_____

Additional Comments:

Checklist completed by: _____

Date: _____

INSTANT PRESS RELEASE FORM

At _____, _____, Maine Narrow Gauge Railroad _____
(Time) (Today's Date) (Train Number)

carrying approximately _____ passengers was involved in a _____
(Number) (Type of Incident)

_____ at _____. Injuries are reported to be
(Location)

_____, and law enforcement/rescue personnel were immediately dispatched
(Major/Minor)

to the scene. Weather at the time of the incident was _____
(Clear/Cloudy)

Further information will be released as it becomes available.

=====

Name of Spokesperson: _____

Date & Time of Initial Release _____

Information Released To: _____

Comments: _____

PROCEDURE

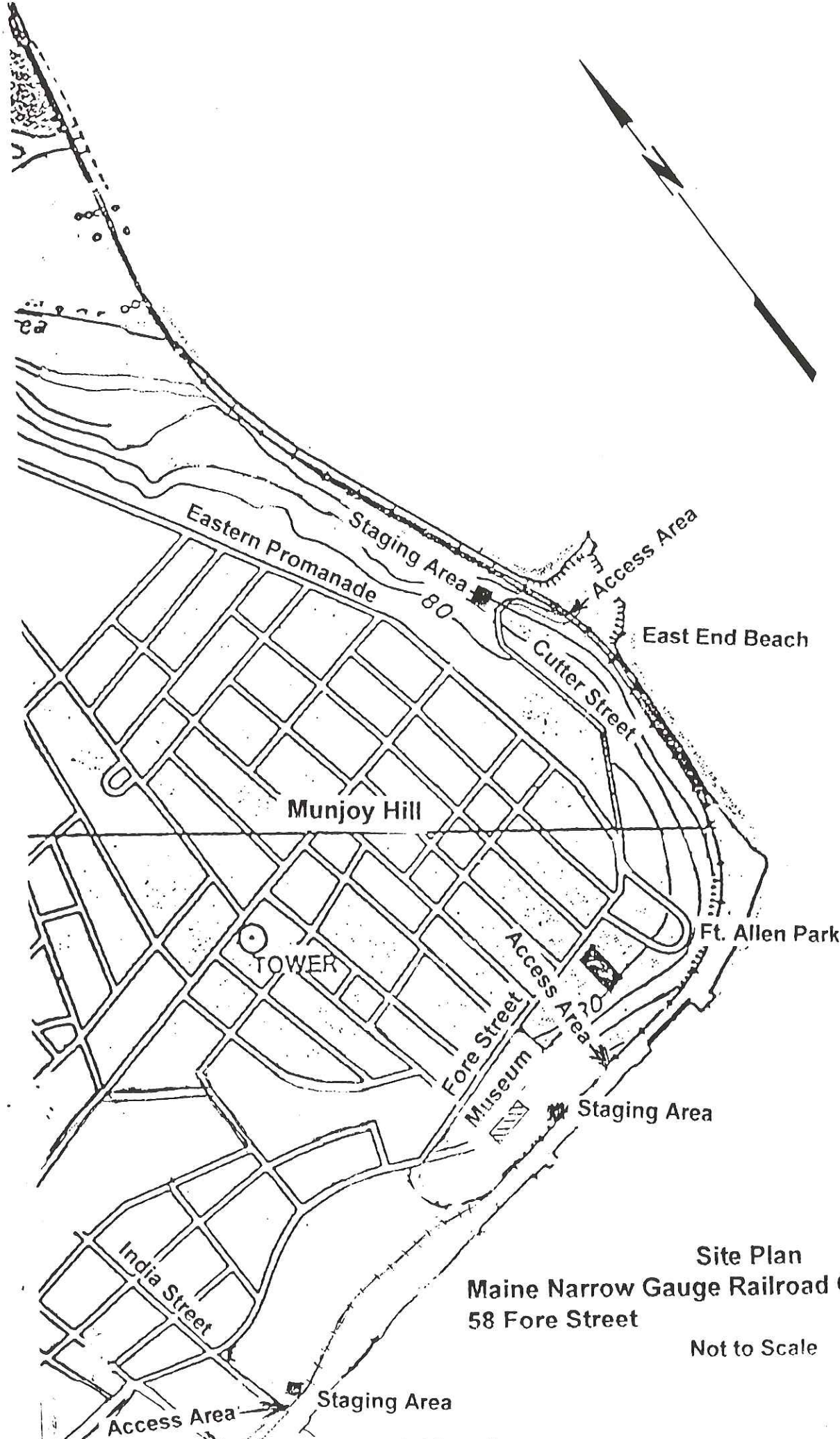
TO BE FOLLOWED IN THE EVENT OF A RELEASE/THREAT OF RELEASE OF OIL OR HAZARDOUS MATERIAL OR POLLUTING DISCHARGE BY THE MAINE NARROW GAUGE RAILROAD COMPANY & MUSEUM

1. **IMMEDIATELY:** Notify the Superintendent of Operations (Primary Emergency Response Manager, home phone 207 657-3293) and the appropriate emergency agencies, including Police, Fire Department and those agencies listed on Emergency Checklist II.

If unable to reach Superintendent of Operations, use Emergency Response Manager call list in order of appearance on list until a Response Manager is reached.

REPORT

- (A) The Location of the release/threat of release.
- (B) Petroleum products, although not considered by D.O.T. to be Hazardous Material, must also be reported.
- (C) If a release occurred, the quantity of spill by best estimate.
- (D) Approximate distance to nearest stream, body of water or swamp.
- (E) Can released material reach such stream, body of water or swamp.



Site Plan
Maine Narrow Gauge Railroad Co. and Museum
58 Fore Street
Portland, Main
Not to Scale



NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C. 20594

SUMMARY OF ACCIDENT REPORTING REQUIREMENTS

"ACCIDENT" means any collision, derailment, or explosion involving railroad trains, locomotives, and cars; or any other loss-causing event involving the operation of such railroad equipment that results in a fatality to a passenger or employee, or in the emergency evacuation of persons.

WITHIN 2 HOURS

Notify the National Response Center (NRC) if the the accident results in:

1. A passenger or employee fatality or two or more crewmembers or passengers being injured seriously enough to require admission to a hospital;
2. The evacuation of a passenger train;
3. Damage to a tank car or container resulting in the release of hazardous materials or involving evacuation of the general public; or
4. A fatality at a grade crossing.

* * * * *

WITHIN 4 HOURS

Notify the NRC if the accident does not meet the above criteria but results in:

1. Damage estimated at \$150,000 or more in repairs (or current replacement cost) to railroad or nonrailroad property; or
2. Damage of \$25,000 or more to a passenger train including railroad and non-railroad property.

NOTIFICATION PROCEDURE

Telephone the NRC duty officer toll free at 1 800-424-0201

Give the following information

1. Name and title of person making the report.
2. Name of the railroad.
3. Description of the accident.
4. Casualties--number of fatalities and injuries.
5. Property damage estimate.
6. Name and telephone number of person from whom additional information may be obtained.

THE TRUST FOR THE PRESERVATION OF 1-95
MAINE INDUSTRIAL HISTORY AND TECHNOLOGY
P. O. BOX 377
GRAY, ME 04039

52-60/112

1039

JUNE 22, 1995

PAY TO THE
ORDER OF

CITY OF PORTLAND

\$ 422.53

FOUR HUNDRED TWENTY-TWO AND 53/100 DOLLARS



Key Bank of Maine
Gray, Maine 04039 156

MEMO

INSPECTION FEE

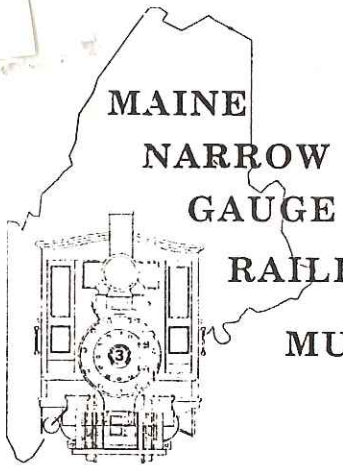
J. Emmet Luntz

MP

⑆011200608⑆ 7 01204878 3⑈ 1039

SAFETY PAPER

0 DELUXE NEWPORT DRK



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

October 20, 1996


Mr. Joseph E. Gray, Jr.
Director, Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Attention: Richard Knowland

Reference is made to your letter of extension of the completion date of our main line track dated September 23, 1996, item #3. This letter will primarily address the coal/smoke situation. I hope to have a revised construct of current track construction within three weeks. As of October 20, there is only 1 switch and 160 feet of additional track to build to tie into the bridge. Ballasting should be completed upon completion of the track structure.

I would first like to make an apology. We modified our coal quite a while ago and although I mentioned it to Rick a couple of times, I apparently never sent the tests of the hard coal, nor told you of our changed firing practice as I had intended to.

We started to add hard coal to the soft coal we were burning to reduce the amount of visible omissions. We currently mix equal amounts of hard and soft coal which has resulted in exceptionally clean stack and economical firing in spite if the \$130 per ton cost, as low as 1.25 ton over the recent 3 day weekend. I am enclosing lab tests of both coals which indicate that the sulphur content of both coals is in the vicinity of 1.1%, well within the parameters recommended by Bill Petitejean. I have discussed what we are doing with him recently. He will look over our data and talk with me in Seattle Nov. 1. I anticipate a written report to follow. His initial reaction was that the use of the hard coal would help operating emissions. His initial recommendation on startup was to use compressed air in the forced draft blower pipe to clean up the wood fire emissions and possibly decrease firing time. A small change in piping will be required. I will forward a copy of his thoughts upon receipt.

Very truly yours,

J. Emmons Lancaster
Superintendent

P.O. BOX 63
BANNER, KY. 41603

(606) 874-9231

PRODUCER
ADDRESS

Lab No.
Date Rec'd. 10/18/94 - 10/28/94
Date Sampled 10/18/94 - 10/28/94
Sampled By At Deane, KY
Customer C. H. Sprague -
S X Stoker
Item(s) Hazard #4
Other Temp. F.P.

- Tide #660
Size 4" x 0

CONFIDENTIAL

Sample Identifi

#660

SPECIFICATIONS

	% Volatile	% Fixed Carbon	% Moisture	% Ash	% Sulfur	% BTU
Rec'd.	35.21	49.78	5.28	8.66	1.07	12,921
As Shipped	37.17	52.55		9.14	1.13	13,641
M-Free						15,014

	SPECS	Fusion Temperature of Ash		SPECS	
Swelling Index No.	5	Initial	2743	°F	°F
Hardability Index No.	45	Softening	2800	°F	°F
Moisture		Hemispherical	2800	°F	°F
		Fluid	2800	°F	°F

SCREEN ANALYSIS

SIZE	WT. (IN LBS.)	PERCENTAGE	CUMULATIVE PERCENT
+4"		1.12	1.12
4" x 2"		22.59	23.71
2" x 1 1/4"		29.43	53.14
1 1/4" x 3/4"		8.09	61.23
3/4" x 3/8"		9.21	70.44
3/8" x 1/4"		10.32	80.76
1/4" x 0		19.24	100.00

RECEIVED
WARRIOR 94.7 11/14/94
GARY J. SMITH
SPRAGUE COAL DEPT.

TOTAL WEIGHT

Submitted By:

Chemist



MINERAL LABS, INC.

Box 549

Salyersville, Kentucky 41465

Phone (606) 349-6145

Post-it™ brand fax transmittal memo 7671 # of pages ▶

To <i>Emmox Laverne</i>	From <i>Gary Smith</i>
Co. <i>MARER</i>	Co. <i>SURE</i>
Dupt.	Phone # <i>603 431 1000</i>
Fax # <i>207 057 3293</i>	Fax #

DATE OF ANALYSIS

Lab No. 150940780 3454
Date Rec'd. 9/25/95
Date Analyzed 9/25/95

Sampled By: *LAB Sample Type: AUTOMATIC

SAMPLE IDENTIFICATION AS SUPPLIED BY SAMPLER
SUNNY KNOTT; 4 X 0; 152 CAR COMPOSITE
9-8-95 THRU 9-21-95; 80 - WAREN
1ST CAR #CSXT-388779, LAST CAR #CSXT-387720
*OBSERVED AUTOMATIC SAMPLER
CAR TOP SAMPLE FOR SCREEN ONLY
PYRITIC SULFUR = 0.15%, CHLORINE = 0.12%

(D2961-93)	% Moisture	% Ash D3174-83	% Volatile D3175-89a(1993)	% Fixed Carbon (Calculated)	B.T.U. D1989-93	% Sulfur D4239-84 (Atwood C)
As Rec'd.	5.34	8.53	XXX	XXX	12,842	.80
Dry Basis		9.01	XXX	XXX	13,566	.84
M.A.F.B.T.U. (Calculated)					14,909	

Free Swelling Index No. XXX
D720-91
Grindability Index No. 45
D400-83a

-FUSION TEMPERATURE OF ASH- D1967-87 (1994)	Reducing		Oxidizing	
	Initial	Softening	Hemispherical	Fluid
	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX

SCREEN ANALYSIS D4749-87

SIZE	% WT. RETAINED
+ 4	2.30%
4 X 2	17.12%
2 X 1 1/4	17.05%
1 1/4 X 3/4	18.29%
3/4 X 3/8	17.15%
3/8 X 1/4	5.87%
1/4 X 0	22.22%
	100.00%

WEIGHT DETERMINATION

Average Light Draft	X	X	X	
Average Loaded Draft	X	X	X	
Weight of Coal Loaded	X	X	X	Tons

RECEIVED

9/28/95 Laverne 95-4

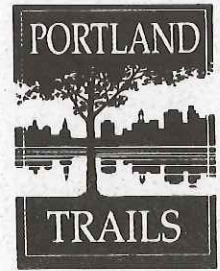
GARY J. SMITH
SPRAGUE COAL DEPT.

Submitted By *[Signature]*
THIS DOCUMENT PROVIDED ON CONTROLLED STOCK PAPER, NOT VALID IF ALTERED.

4091837



City of Portland, Maine



Portland Trails

Eastern Prom Trail Groundbreaking Ceremony

The City of Portland and Portland Trails invite you to join them in a Groundbreaking Ceremony for the Eastern Prom Trail on National Trails Day Saturday, June 1st 10:00 a.m. to Noon at East End Beach.

The Ceremony will commemorate the start of trail construction. Activities will include kite flying, live music, displays of trail plans, the Kids and Transportation Program, a tour of the proposed trail site, a Munjoy Hill Neighborhood exhibit, Maine Narrow Gauge Railroad rides, a few brief speeches and lots more.

Hope to see you on June 1st...

The Eastern Prom Trail...

connecting parks with people...

Sponsored by Eastern Mountain Sports, L.L. Bean, Nike, Turning Point at Maine Medical Center, Portland Water District and the Bay Club

copy RK, DA

Bartlett Design
LIGHTING & ELECTRICAL ENGINEERING
1 FRONT STREET P.O. BOX 230 BATH, MAINE 04530
TEL (207) 443-5447 FAX (207) 443-5560

June 10, 1996

Ms. Melody Esterberg
City of Portland
Dept. of Planning & Urban Development
389 Congress Street
Portland, Maine 04101

Copy to:
Alex Jaegerman
Planning Dept.

RE: Bike Path Lighting for the Eastern Promenade
P96-0019

Dear Ms. Esterberg:

Per a recent discussion I had with Alex Jaegerman at the Department of Planning & Urban Development, I am forwarding this proposal relative to the design for bike path lighting along the Eastern Promenade.

Project Scope

The project scope includes approximately 2.1 miles of bike path extending around the Eastern Promenade with new construction from the B.I.W. Complex, along the shore side of the Eastern Promenade, past the Sewage Treatment Plant, under Tukey's Bridge and connecting to the Back Cove path.

(ONLY NEED PHASE I FOR NOW)

New bike path lighting will include 14 foot high poles with luminaires manufactured by Lumec, in accordance with the suggestions made by the City of Portland Planning Department. Lighting will be provided for intersections where the bicycle route crosses train and/or vehicle paths. Lighting systems at these locations will be designed in accordance with recommendations listed IESNA Publication DG-5-94.

+ where paths converge

Engineering Services

Engineering services offered in this proposal include the following tasks:

Design Development Phase

Design development for the bike path lighting will include preliminary engineering to identify systems components and layout. The design for the new bike path lighting pole will be developed with input from the City Staff and will be coordinated with the pole/luminaire manufacturer (Lumec).

in clear...
change section...
need

Calculations will be performed to quantify the lighting performance of the proposed design. Preliminary plan layouts and details will be prepared to illustrate the nature and extent of the lighting systems. A construction cost estimate will be prepared for the preliminary design. Electrical service requirements will be coordinated with the Central Maine Power Company.



CITY OF PORTLAND

September 19, 1996

Commissioner John Melrose
 Maine Department of Transportation
 State House Station 16
 Augusta, ME 04333-0016

RE: Eastern Promenade Trail Funding

Dear John:

As discussed in your meeting with George Campbell, Bill Bray, and Melodie Esterberg on Tuesday, August 13, 1996, the current level of funding for the Eastern Promenade Trail Project is considerably less than the projected construction costs. The contract for phase 1 of the project, which consists of constructing the trail to Cutter Street, was awarded in the amount of \$571,688.55. We anticipate that the balance of the current funding would be approximately \$100,000. Phase 2, which connects Portland's waterfront to the Baxter Boulevard trail, is estimated at \$600,000 to \$700,000. In order to meet the projected budget deficit of \$600,000, we are requesting your support and approval to transfer funds from the following projects contained in the FYs 94 through 97 Transportation Programs (TIP).

PROJECT NAME	MDOT PIN NO	FUNDING LEVEL
Franklin Arterial Bike Lane	5782.00	\$200,000
Martin's Point/Veranda Street	6849.00	\$128,000
Eastern Prom Switchback Trail	6848.00	\$ 89,000
TOTAL DEFERRED FUNDING		\$417,000

We are also requesting that these deferred projects be re-authorized in the forthcoming FY 98-99 State TIP.

To complete the funding package we requesting an additional \$175,000 in surplus Interstate Maintenance funds to cover the full cost of constructing the necessary bridge connection at Tukey's Bridge.

Commissioner John Melrose
September 19, 1996
Page 2

Your support in meeting the funding needs of this exciting state-wide project will be greatly appreciated.

Sincerely,



Robert B. Ganley
City Manager

RBG/s

pc: George Campbell, City Councilor
Nadeen Daniels, Assistant City Manager
Bill Bray, Deputy Director
Bruce Bell, Operations Manager
Kathi Staples, P.E., City Engineer
Melody Esterberg, P.E., Project Engineer
Joe Gray, Director of Planning and Urban Development

Aug Kirk - M.P. 01

May 25, 1971

Parcel No.	Location	Amt. of State Award	Amount Received by City of Portland
944	Winslow Park	\$ 30,000.00	\$ 30,000.00 ✓
1014-3	Marginal Way	43,500.00	43,500.00 ✓
1009-2	" "	8,900.00	8,900.00 ✓
1009-1	" "	14,000.00	14,000.00 ✓
1009-6	" "	4,000.00	4,000.00 ✓
4814-1	Barrows Park	60,000.00	deleted
838-3	Rear of Fire Station	6,500.00	6,500.00 ✓
842R-1	Rear of Stadium	86,500.00	86,500.00 ✓
* 838-4	Deering Oaks	20,900.00	20,900.00 ✓
* 942R-2 (842R-2)	Deering Oaks	52,500.00	52,500.00 ✓
* 906R 1009-5	Deering Oaks Back Cove Park	88,600.00 1.00	88,600.00 ✓ 1.00 ✓
* 907	Deering Oaks	38,000.00	38,000.00 ✓
	Original Award	\$ 453,400.00	\$ 393,400.00
	Deduct: Barrows Park	-60,000.00	
	Net Amount of Award	\$ 393,400.00	
			State of Maine Escrow
	Total Amount of State Awards Received		\$ 393,400.00
	Total Cash Received from State as of May 25, 1971		261,401.00
	Difference		132,000.00
			\$ 131,999.00
			132,000
			30,000
			102,000

* Represents second payment from State of Maine



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

March 3, 1996

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

Attention: Richard Knowland

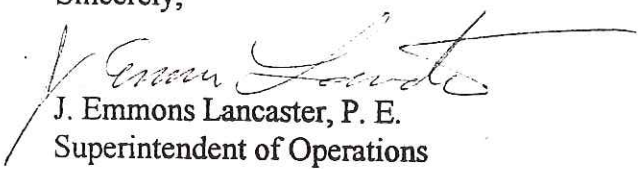
RE: Submissions to Planning Authority as spelled out Planning Board vote of December 12, 1995

Dear Mr. Gray:

Attached please find requested schedule of work for 1996. Placement of ballast and cross drains and construction of switches at India Street is already under way. Crucial to this schedule are the completion of Cutter Street drainage projects, still not under way.

If you have any questions or comments about this schedule, please contact me.

Sincerely,


J. Emmons Lancaster, P. E.
Superintendent of Operations

MAINE NARROW GAUGE RAILROAD AND MUSEUM
CONSTRUCTION SCHEDULE

CONSTSKD.WK4
02-Mar-96

MONTH JUNE '95 JULY '95 AUG. '95 SEPT. '95 OCT. '95 NOV. '95 DEC. '95 JAN. '96 FEB. '96 MAR. '96 APRIL '96 MAY '96 JUNE '96 JULY '96 AUG '96 SEPT '96 OCT '96

PROJECT	JUNE '95	JULY '95	AUG. '95	SEPT. '95	OCT. '95	NOV. '95	DEC. '95	JAN. '96	FEB. '96	MAR. '96	APRIL '96	MAY '96	JUNE '96	JULY '96	AUG '96	SEPT '96	OCT '96
CUTTER ST. XING				COMPLETE													
CUTTER ST. SIGNAGE										YYYYYYYYY							
CUTTER ST OUTFALL										YYYYYYYYY							
TRAIL CROSSING EAST																	
TRAIL CROSSING WEST																	
EROSION CONTROL																	
EARTHWORK FISH-CUTTER																	
EARTHWORK CUTTER-BRIDGE																	
TRANSPORT TIES																	
SORT,CUT,PLACE TIES																	
OBTAIN-TRANSPORT RAIL																	
CONSTRUCT TRACK-ML																	
CONSTRUCT EAST PSG TK																	
CONSTRUCT W EST PSG TK																	
RELOCATE TRACK FISH-CUTTER																	
OBTAIN BALLAST																	
BALLAST TRACK INDIA-FISH																	
BALLAST TRACK CUTTER-BRIDGE																	
BALLAST TRACK FISH-CUTTER																	
OBTAIN CROSS DRAINS																	
INSTALL CROSS DRAINS																	
REPAIR CULVERTS																	
U.G. PIPE AND WIRE																	
SHELTER & TANK																	
TREE PLANTING																	
REVIEW COMPLETION																	
EMISSION STUDY																	
TRAFFIC STUDY																	

NOTES:

XXXXXXXXXXKEY RAILROAD PROJECTS
YYYYYYY KEY CITY PROJECTS

XXXXXXXXXXAPPLY FOR EXTN BY 10/31 IF REQUIRED
REPORT SUBMITTED IN SEPTEMBER '95
EXTENSION GRANTED THRU SEPTEMBER 30, 1996
NO REPLY BY FEB 1996
IMPLEMENT BY APRIL 1997



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

August 14, 1996

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall
389 Congress Street
Portland, ME 04101

Attention: Richard Knowland

RE: Extension of construction deadline of September 30, 1996

Dear Mr. Gray:

This letter is to request that the date for completion of the track structure of our main line extension to the bridge be extended to November 1, 1996. In conversations with Mr. Knowland regarding our construction plans, we were advised that if we were unable to meet the construction schedule as voted by the board that we should notify you by August 15 of our status and request additional time. This letter is in response to that request.

In June we were fortunate to obtain the services of the National Guard to grade the subgrade from MP 1 at Cutter Street almost all the way to the bridge. Track laying is progressing at a rapid rate currently, with over 1000 feet down of the 2250 feet of main line track to be laid. We still have two passing tracks to complete as well. The India Street siding rail is about 1/3 laid. We expect delivery of an additional 600 track feet momentarily by barge, and have had several other generous rail donations recently.

Ballast deliveries will begin shortly to complete the 1000 feet now down, but additional donations of ballast or transportation will be required to complete the line. Ballast is critical to your acceptance of our work.

A serious problem has manifested itself, in that much of the very hard to get track iron, special bars to fit certain rails and switch slide plates, being very heavy, have attracted the local iron thieves. The loss, and only partial recovery, may substantially hold up completion of the track.

Mr. Joseph E. Gray, Jr.

August 14, 1996

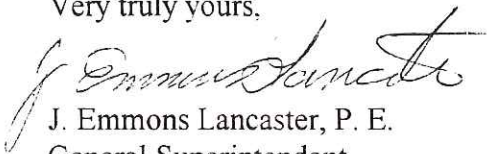
The scope and location of the construction of our companion project, the trail, has changed substantially, reducing the urgency of completing the Cutter Street to Bridge portion of the line, where the only construction to be done this year will start at Cutter Street and progress toward India Street. Our present deadline was predicated on total trail construction and under that scenario the September deadline was valid, but there will be no conflict in this area until next year. We were asked by City forces to not construct track in anticipation of their constructing the drainage outfall west of Cutter Street, delaying any extension in fact already started last fall and during the winter.

Our construction schedule has been hampered by the extremely long winter. Heavy snow and rain in the spring effected the date that we were able, under the last extension order, to complete certain portions of Phase 1 before actually starting the track extension. The actual construction did not start until July 1.

We request that the board give favorable consideration to our request and grant a new completion date.

Thank you.

Very truly yours,



J. Emmons Lancaster, P. E.
General Superintendent

cc Melodie Esterberg
Phin Sprague

CITY OF PORTLAND, MAINE
M E M O R A N D U M

TO: Joseph Gray, Director of Planning
FROM: Donna M. Katsiaficas, Associate Corporation Counsel
DATE: July 12, 1995
RE: Eastern Prom Trail - Cutter Street Crossing

I am writing this memo in response to your question regarding improvements at the Cutter Street crossing of the Eastern Prom Trail.

I spoke with Surran Pyne, the MDOT attorney working on this project today. MDOT records indicate that the Cutter Street crossing is a private crossing, not a public crossing. In order to make the crossing a public crossing, the City would need to petition MDOT under the provisions of Title 23 of the state statute. Surran indicates that this is a relatively easy process, and that in order to get the process started, someone from public works should contact Alan Bartlett directly. He will advise them on what has to be done.

Because the crossing is a private crossing, the City cannot expend federal funds on improvements. If the City expends its own funds on the improvements before the crossing is made a public crossing, it cannot get reimbursed by federal funds.

With respect to your questions regarding the City's ability to review the materials being installed by the Narrow Gauge, Surran indicates that the City has no legal right to review the materials, however if the City has concerns about the improvements or the quality of the materials, the concerns should be voiced as soon as possible to Alan Bartlett. The City should be prepared to suggest alternatives to designs and materials to Alan if Alan is to consider the City's concerns.

Donna M. Katsiaficas

Donna M. Katsiaficas
Associate Corporation Counsel

DMK:lab

cc: Robert B. Ganley, City Manager
Kathy Staples, City Engineer

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION BUILDING

STATE HOUSE STATION 16 AUGUSTA, MAINE 04333-0016

LEGAL SERVICES Tel: (207) 287-2681 Fax: (207) 287-6738
MDOT TDD Telephone # 287-3392

JOHN G. MELROSE
Commissioner

May 12, 1995

Donna M. Katsiaficas, Esq.
Associate Corporation Counsel
City of Portland
389 Congress Street
Portland, Maine 04101-3509

Re: Eastern Promenade Trail - Corridor Agreement

Dear Donna:

Enclosed please find one original, fully executed copy of the Eastern Promenade Trail Corridor Agreement between the City of Portland and the State of Maine.


Just as a reminder to both of us, the Trail Plan, as noted in Section 4 of the enclosed Corridor Agreement, needs to be finalized and approved by the Department prior to entering into the two Recreational Trail Crossing Agreements. Would you kindly advise me of the status of the Trail Plan.

Allan Bartlett and I met today to begin drafting the two crossing agreements concerning the crossings to the parking areas currently leased to Bath Iron Works. I will forward drafts for your comments as soon as we have completed them.

Also, please be advised it is the Department's understanding that the Cutter Street Crossing was laid out but was never formally created as a public crossing. This area will continue to be a private crossing, unless the City petitions the Department pursuant to Title 23, M.R.S.A. §7201 et seq.

I trust you will find the enclosed in order, and thank you for all of your time and assistance on this project.

Yours sincerely,


Jane Surran Pyne
Attorney

JSP:st

Enc.

cc w/original: Allan H. Bartlett, Director, Rail Trans. Division



Peter S. Rice
Banking Officer
Corporate Banking

June 28, 1994


Jadine O'Brien
Portland Planning Board
City of Portland
Portland, Maine 04101

Dear Ms. O'Brien:

Fleet Bank of Maine, as the agent for a participation of banks, approved and funded financing for the initial purchase of the Maine Narrow Gauge Railroad's (MNGRR) train collection in May of 1993. Approval of financing was based on the MNGRR's original business plan, which included specific plans for the laying of track upon which to operate the train. We were comfortable with the organization's overall business plan and, in fact, required as a condition of the loan that operation of the train on a 1.5 mile track occur by 4/30/95. In the event that the MNGRR seeks additional financing from Fleet Bank of Maine for the laying of track, we would consider such a request on the basis of the current financial condition and performance of the organization as well as the updated plans for the project at that time.

This letter is not a commitment to lend nor is it a statement of intent to make such a commitment. It is provided to the addressee at the request of Phineas Sprague.

Sincerely,



Peter S. Rice
Fleet Bank of Maine

Memo to: File

From: Tom

Date: December 8, 1994

Subject: M.N.G.R.R.

It has been relayed to us ^{by Phineas Sprague} that the Maine Narrow Gauge Railroad has been inspected by George Jackman, ~~of the~~ Maine DOT track inspector and ~~and~~ Tim Toler, Federal Rail Authority on December 5, 1994

They approved the construction and layout during their visit, and gave the MNGRR authorization to ~~run on the~~ ~~line.~~ operate on the ~~route~~ sections that have been completed.

Planning & Urban Development



Joseph E. Gray Jr.
Director

CITY OF PORTLAND

October 31, 1994

Mr. Phineas Sprague
Maine Narrow Gauge Railroad Company
58 Fore Street
Portland, ME 04101

Dear Mr. Sprague:

Thank you for faxing the updated information on Friday afternoon. In further reviewing the pledge letter to the City for salvage rights, it may be necessary to make a minor revision. I am not entirely clear what the relationship is between Maine Narrow Gauge Railroad Co. Museum and the Trust for the Preservation of Maine Industrial History and Technology but if the Trust does have an interest in the trackage and ties, than they should also be referenced in the pledge letter.

Please let me know if the Trust does have such rights and if they do, revise the pledge document accordingly. I will also need an original letter for our files.

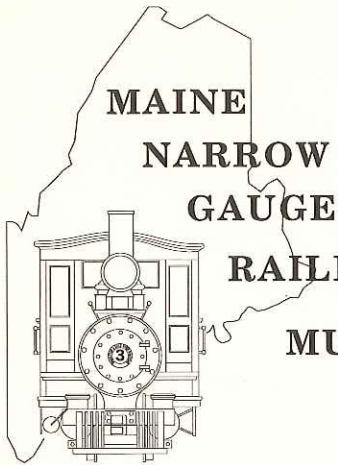
Should you have any questions on this letter, please call me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard Knowland".

Richard Knowland
Senior Planner

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development
Alexander Jaegerman, Chief Planner
Natalie Burns, Associate Corporation Counsel



MAINE
NARROW
GAUGE

RAILROAD Co.
&
MUSEUM

December 8, 1994

58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

Richard Knowland
City of Portland Planning
389 Congress Street
Portland,
ME 04101

Dear Mr. Knowland,

In reference to your letter of October 31, 1994.

In our disclosures, we have documented that The "Trust" and the Maine Narrow Gauge Railroad Company & Museum are the same entity. The pledge is an effective document in regard to it's intent.

If you have further concerns, I would be glad to revise the wording. I will stand by for your judgement on the matter.

We hope that you are planning to join us this Saturday or Sunday as we begin our operations.

Yours truly,

A handwritten signature in dark ink, appearing to read 'Phineas Sprague, Jr.', written over the typed name below.

Phineas Sprague, Jr.
President

PHASE ONE BOND AMOUNT

Maine Narrow Gauge Railroad
Cost Estimate - Phase 1

1. Temporary Erosion Controls	
• 1,300 L.F. siltation fence @ 2.	\$2,600. ?
• 9 Haybale check dams @ 25.	<u>220.</u> OK
	2,820
2. Earthwork	
• Rough grading, 1,200 C.Y. @ 3./CY	\$3,600. FOR TRACKS, YES
3. Storm Drainage	
• 6-9 ductile iron pipes, 6" x 15' @ 22/L.F.	1,980. NONE OF THE DRAIN PIPES INSTALLED
• Maintenance of existing pipes L.S.	200. ? NO
• Rip Rap of Storm Pipes L.S.	<u>1,500.</u> ? NO
	\$3,680.
4. Railroad Track Ballast	
• Provide and install	<u>8,500.</u> MAYBE 50% TO 60% IN PLACE
TOTAL	\$18,600.

INCLUDES WALKWAY AND CROWING

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION BUILDING

STATE HOUSE STATION 16

AUGUSTA, MAINE

04333-0016

16
JUL 28 1993

RECEIVED

AUG 02 1993

PORTLAND PLANNING OFFICE

DANA F. CONNORS

Commissioner

July 20, 1993

Mr. Robert Ganley, City Manager
City of Portland
City Hall
389 Congress Street
Portland, Maine 04101

Subject: Acquisition and Reuse of Canadian National Railway's
Portland Peninsula Property

Dear Bob:

This letter is in response to your recent request to confirm understandings that the Maine Department of Transportation (Department) reached with the City of Portland (City) at an earlier meeting with Russ Spinney and myself attended by Joe Gray on behalf of the City, as well as by Eliza Cope of the Trust for Public Lands (TPL) and Nathan Smith representing TPL and Portland Trails regarding the public acquisition and reuse of Canadian National (CN) Railway's Portland Peninsula property around the Eastern Promenade.

The Department looks forward to working with the City in making this land available both for public recreational use and long-term rail transportation opportunities. Inasmuch as part of the land conveyance by CN to the Department involves a 26-foot wide corridor, which extends from Commercial Street to the northern boundary of the land that the City leases to the Bath Iron Works Corporation (BIW), you have expressed the need to obtain access across this corridor in the event that the City leases or sells some of the former CN railyard property (which the City is acquiring) to BIW or others. As you know, the State of Maine is a "partner" with the City and BIW in the ship repair facility and we would have no problem providing suitable crossing rights. Such rights would be appropriate to the proposed use and would be consistent with our long-term need to protect the public safety and to provide rail transportation through the corridor.

We have also discussed and reached an understanding in principle regarding an easement from the Department to the City for the development and maintenance of the recreational portions of the Eastern Promenade corridor to be acquired from CN by the Department on behalf of the State of Maine. From the beginning, it is my understanding that the City's interest in acquiring the property has been focused on the recreational opportunities that public ownership presents. In that regard, the City's priority

Aug 01 93 1:48 PM 1001 P.00

Mr. Robert Ganley, City Manager
Page two
July 20, 1993

recreational use will be the development of a pedestrian/bicycle trail system. Any other use of the property for public purposes must be compatible and not in conflict with that use. While the details will need to be worked out, in broad concept we have agreed that, in return for the City's providing maintenance and assisting in the development and construction of the trails and other improvements and the maintenance of public safety within the rail corridor, following conveyance to the Department by CN, the Department will provide the City with an appropriate easement to permit all of these activities as well as public access to the recreational portion of the Eastern Promenade corridor. The installation of the pedestrian and bicycle trails and other recreational amenities will need to be consistent with the Department's need to preserve a corridor for future railroad uses. We expect that any improvements would be done in cooperation and coordination with the Department and other groups who would appropriately participate in the planning and design of the recreational and transportation aspects of the Corridor.

I hope this letter adequately responds to and addresses your concerns. I would like to add that I think the public acquisition of CN's Portland Peninsula property not only opens up transportation and economic development opportunities for the City and the region, but enables the Department and the City, working in concert with Portland Trails and TPL, to make possible a magnificent pedestrian and bicycle trail that will benefit those who live in Greater Portland and throughout the State for many years to come.

I look forward to our continuing cooperation in completing this worthwhile project.

Sincerely,

MAINE DEPARTMENT OF TRANSPORTATION



Dana F. Connors, Commissioner

DFC:RWS:ty

cc: The Honorable Joseph Brannigan, State Senator-District 29
Portland City Council
Eliza M. Cope, Esq., The Trust for Public Lands

Gary C. Wood
Corporation Counsel



Charles A. Lane
Elizabeth L. Boynton
Natalie L. Burns
Donna M. Katsiaficas

CITY OF PORTLAND

November 15, 1993

Surran Pyne
Maine Department of Transportation
State House Station 16
Augusta, ME 04333

RE: Easement for Portland Trail

Dear Surran:

Enclosed please find a draft Recreational Easement for the recently purchased Canadian National property. The easement is drafted broadly in order to provide both parties with flexibility.

Please review the easement and contact me with proposed revisions. The City of Portland is anxious to move forward on this project.

I look forward to hearing from you.

Sincerely,

A handwritten signature in cursive script that reads "Donna M. Katsiaficas".

Donna M. Katsiaficas
Associate Corporation Counsel

DMK:lab

Enc.

pc: Alan Bartlett, Maine Department of Transportation (w/Enc.)
Russ Spinney, Maine Department of Transportation (w/Enc.)
Nathan Smith, Esq. (w/Enc.)
Joseph E. Gray, Jr., Director of Planning and Urban
Development (w/Enc.)

EASTERN PROMENADE TRAIL AND RAIL CORRIDOR

AGREEMENT AND EASEMENT

Agreement and Easement executed this _____ day of _____, 1993, by and between the City of Portland, Maine, a body politic and corporate, located in Cumberland County, Maine (hereinafter referred to as the "City") and the State of Maine acting by and through its Department of Transportation with an address of State House Station 16, Augusta, Maine, 04333 (hereinafter the "Department").

WHEREAS, the Department purchased a certain parcel of land (the Department Property) on the Portland Waterfront shown as Parcel C on a Plan entitled "Land Title Survey and Subdivision Plan in Portland, Maine, USA," (hereinafter the "Plan") made for The Trust For Public Land, City of Portland, the Maine Department of Transportation and the Canadian National Railway Company, Sheets 1 through 7, dated February 19, 1993, as revised through June 28, 1993, and recorded in the Cumberland County Registry of Deeds in Plan Book 193, Pages 187 to 193; and

WHEREAS, the City purchased certain parcels of land shown on the Plan as Parcels A and B and Lot 2 (the City Property); and

WHEREAS, the City purchased the City Property in order to facilitate the construction of a shorefront bicycle and pedestrian trail and to provide for future transportation, economic development and recreational uses; and

WHEREAS, the Department purchased the Department Property utilizing funds available under the Intermodal Surface Transportation Efficiency Act of 1991 which provided for, among other things, the use of federal highway dollars for: (1) the provision of facilities for pedestrians and bicycles, (2) the acquisition of scenic easements and scenic or historic sites, (3) landscaping and other scenic beautifications, (4) historic preservation and (5) the preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails); and

WHEREAS, the Department desires to maintain a continuous rail corridor twenty-six (26) feet in width extending from the intersection of Commercial and India Streets (mile 0.0), to mile 1.75 on the former Atlantic and St. Lawrence Railroad Line in the location more particularly described on Exhibit A attached hereto (the Rail Corridor); and

WHEREAS, the City wishes to provide for a recreational and transportation bicycle and pedestrian trail and waterfront park over, under and along all of the Department Property which is not within the Rail Corridor (hereinafter the Eastern Promenade Trail Corridor) as to use for such transportation and recreational purposes any portions of the Rail Corridor which are not designated from time to time for exclusive Rail use; and

WHEREAS, the City and the Department desire to work cooperatively to provide for transportation and recreational trail opportunities for the citizens of Greater Portland and of Maine along the Eastern Promenade Trail Corridor and to accommodate rail transportation uses within the Rail Corridor; and

WHEREAS, the City and Department have agreed that landscaping, construction of improvements, maintenance of improvements and provisions for public safety within The Eastern Promenade Trail Corridor and areas which lie within the Rail Corridor which are not exclusively used under the direction of, or under lease from the Department) are to be handled by the City; and

WHEREAS, the Department has agreed to the terms and conditions of this Agreement in an effort to achieve the various goals of the Department and the City and in consideration of the fact that the City is going to take the primary responsibility for overseeing the landscaping, construction, development and maintenance of the trails and recreational facilities within The Eastern Promenade Trail Corridor; and

WHEREAS, the Department and the City have the benefit of the Maine Tort Claims Act for those uses which are being granted to the City hereunder;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein, the City and the Department grant, covenant and agree as follows:

1. The Department hereby reserves the right to install within the Rail Corridor described on Exhibit A attached hereto a rail line, together with such appurtenances as may be necessary or appropriate for the operation of such line and the maintenance of public safety; provided however, the Department agrees that the rail line will be designed, constructed and located in manner which is compatible with the other trail and recreational uses within the Eastern Promenade Trail Corridor.

2. The Department hereby grants to the City an easement to use The Eastern Promenade Trail Corridor and those portions of the Rail Corridor not designated from time to time for exclusive use by

the Department, its lessees or operators, for the installation, maintenance, replacement, repair and relocation of one or more pathways for recreational and non-motorized (except as necessary for handicapped and emergency access) transportation uses, including without limitation use by pedestrians, runners, hikers, bikers, roller bladers, and persons in wheel chairs.

3. The Department grants to the City the right (subject such restrictions as may be imposed by the Department from time to time regarding the Rail Corridor) to enter onto the Department Property for any and all purposes related to the maintenance, installation, operation, replacement and repair of improvements in the trail and recreation areas.

4. The Department and the City agree that the City shall not make any improvements to the Rail Corridor without the prior authorization of the Department and that all other improvements to The Eastern Promenade Trail Corridor shall be made only after consultation with the Department.

5. The Department agrees that the City shall have the right to install two "trail" crossings along the Rail Corridor, one from Lot 2 as shown on the Plan to Lot B as shown on the Plan, and the other to cross the Rail Corridor in the general vicinity of the trestle and swivel bridge located at the end of the Portland Peninsula. The locations of said crossings and detailed agreements regarding the crossings shall be executed by the Department and the City at such time as the landscaping plans for the Eastern Promenade Trail Corridor have been finalized. This paragraph is not intended to preclude the possibility of other crossings which may be provided from time to time by the Department to the City in such locations as may be mutually agreed upon nor to restrict or limit the existing crossing at Cutter Street.

6. The City and Department further acknowledge that the swivel and trestle bridge provides a unique opportunity to provide for a bicycle and pedestrian trail connecting East Deering and the communities north of Downtown Portland and agree that if and when the railroad trestle and swivel bridge is restored or funds are allocated for the restoration of that bridge, the City and the Department will enter into a separate agreement providing for use of the trestle and swivel bridge for pedestrians and bicycle users in addition to such rail use as may be permitted by or provided for by the Department.

7. Until such time as the trestle and swivel bridge may be placed into full operation, the Department agrees that the City shall have the right, but not the obligation, to expend funds, whether directly or as may be allocated from time to time from

State or Federal highway funds for purposes of re-decking that portion of the railroad trestle which extends from the base of the Eastern Promenade out to the swivel bridge and to make such other improvements on the said portion of the trestle as may permit use by the public for fishing, walking, strolling and other recreational purposes.

8. The Department further grants the City the right and easement to invite, permit and allow the public to occupy portions of The Eastern Promenade Trail Corridor for such purposes as may be customarily permitted within public parks throughout the City of Portland.

9. The City and Department further understand and agree that except for providing periodic police presence and providing police response capability, that the City's intention hereunder to construct trail and recreation improvements and amenities within the Eastern Promenade Trail Corridor are contingent upon receipt by the City of such funds as may become available from time to time from federal, State, City and private sources and that the City by executing this Agreement is not committing to any specific timetable for the making of improvements thereto.

IN WITNESS WHEREOF, the City and the Department have caused this instrument to be duly executed by _____ and _____, their duly authorized representatives, this _____ day of _____, 1993.

WITNESS:

CITY OF PORTLAND

By: _____
Its City Manager

STATE OF MAINE ACTING BY AND THROUGH ITS DEPARTMENT OF TRANSPORTATION

By: _____
Dana F. Connors, Its
Commissioner

STATE OF MAINE
COUNTY OF _____, SS

_____, 1993

Personally appeared the above-named Robert Ganley, City Manager for the City of Portland who acknowledged the foregoing instrument to

be his free act and deed in his capacity and the free act and deed of said municipal corporation.

Before Me,

Notary Public/Attorney-at-Law

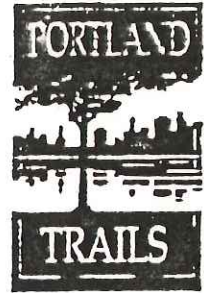
STATE OF MAINE
COUNTY OF _____, SS _____, 1993

Personally appeared the above-named Dana F. Connors, Commissioner of the Maine Department of Transportation, who acknowledged the foregoing instrument to be his free act and deed in his capacity and the free act and deed of said Maine Department of Transportation.

Before Me,

Notary Public/Attorney-at-Law

PORTLAND TRAILS



September 16, 1993

Joseph Gray, Director of Planning
and Urban Development
City Hall
389 Congress Street
Portland ME 04101

Re: Portland Trails - Eastern Promenade Trail

Dear Joe:

I assume the City is pursuing discussions with BIW regarding the lease of parking spaces on the five acres of land (the railyard) recently acquired from Canadian National Railroad. I have enclosed with this letter a copy of a plan showing a possible trail corridor running through the railyard. We realize that at this point any final plans regarding the design and location of the trail corridor and the extent to which it might also include part of the 26 foot MDOT right of way are months away. Nonetheless, we thought it important to propose a location for a 24-foot wide trail corridor pending further refinement in the hopes that the BIW lease (and any purchase options) with the City would not preclude that possibility. I trust everyone agrees that it is important to keep as many options as possible open for the design and location of the entrance to the Eastern Promenade trail at the end of Commercial Street.

Very truly yours,

A handwritten signature in black ink, appearing to read "Nathan H. Smith". The signature is fluid and cursive, written over a horizontal line.

Nathan H. Smith, Vice President
Portland Trails

cc Peter Monro, President Portland Trails
Tom Valleau, City of Portland
Donna Katsiaficas, Esq.

240.NHS
22611001.403

PORTLAND TRAILS
One City Center
Post Office Box 17501
Portland, Maine 04101

April 27, 1994

Portland Planning Board
City Hall
389 Congress Street
Portland, ME 04101

Re: Maine Narrow Gauge Railroad Co. Site Plan Amendment

Dear Board Members:

On behalf of the Maine Narrow Gauge Railroad Co. (MNGRR) we submit the attached plans for amended site plan review, as set forth in the original site plan approval by the Board. MNGRR is proposing to install 2 foot wide tracks for the Narrow Gauge Railroad from India Street to Fish Point. This is intended to be the first phase of a track line which will eventually run from India Street to the Back Cove bridge.

MNGRR is proposing to locate the lines within the dedicated right of way approved by the State and City, and to place the tracks consistent with the needs of the railroad and the future pedestrian use of the right of way. The location of the tracks is as reviewed by Portland Trails, and leaves sufficient room within the right of way for other uses proposed by the City, MDOT and Portland Trails. No changes are proposed within the previously approved interior layout of the building, parking or track located on the Portland Engineering site.

The new tracks will be utilized for operating the existing engines and rolling stock outside of the immediate yard of the museum, and to provide limited passenger service for special events at the museum. MNGRR will present the details of the proposal at the workshop on May 10th in order to secure the Board's input prior to moving forward with the plans for the project.

Sincerely,



Stephen B. Mohr, ASLA

SBM/sd

Enclosure

252\plngbrd

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

Permit to Enter onto State-owned Railroad Property

(Individual)

WHEREAS, J. E. Lancaster and others as Employees/Volunteers of Maine Narrow Gauge Railroad Company & Museum, 58 Fore Street, Portland, Maine 04101 (hereinafter "Permittee") has requested the permission of STATE OF MAINE DEPARTMENT OF TRANSPORTATION (hereinafter "MDOT") to enter and be upon or about the right of way, or other premises, of its Railroad at Portland, Maine for his own purposes and benefit, and particularly for the purpose of constructing temporary trackage, including turnouts, connecting to Portland Company property on MDOT Right of Way between India Street and a point approximately 500' North of the Portland House/Fort Allen Park property line. This location is in conformance with letter from Portland Trails dated August 25, 1993. Final location of track to be determined as part of negotiations with Portland Trails, etc. for use by the Maine Narrow Gauge Railroad Company & Museum at Portland, Maine.

NOW, THEREFORE, MDOT hereby grants permission, for a period of 185 days commencing November 29, 1993 subject to cancellation at any time and in no event be assignable or transferable, to Maine Narrow Gauge Railroad Company and Museum to enter or be upon or about its right of way or other premises, at the location described above solely for the purpose specified above and no other purposes: provided, however, that this permission shall be of no force and effect unless and until said Permittee duly signs and executes the GENERAL RELEASE AND INDEMNITY which is hereinafter set forth.

STATE OF MAINE DEPARTMENT
OF TRANSPORTATION

By: Allan H. Bartlett 1/7/94
Allan H. Bartlett, Acting Director
Rail Transportation Division

GENERAL RELEASE AND INDEMNITY

In consideration of MDOT granting to the undersigned the permission above described, the undersigned, understanding the risk and danger assumed by him and attendant upon his exercise of said permission and that MDOT is under no duty or obligation to give such permission, hereby assumes all risk of injury to the Permittee (including death) and of loss of or damage to his property

occurring or arising while or resulting from being upon or about the said right of way, or other premises, of the said MDOT, whether due in whole or in part to the condition of operation, negligent or otherwise, of said right of way, or other premises, or in whole or in part to the acts or omissions, negligent or otherwise, of the officers, agents, servants, or employees of said MDOT or otherwise: and the undersigned for himself, his executor, administrator, heirs at law, next of kin and his successors and assigns hereby releases and forever discharges said MDOT, its successors and assigns from any and all claims, demands, actions and causes of action which the undersigned, his executor, administrator, heirs at law, next of kin and his successors and assigns have, could or might have against the said MDOT, its successors and assigns, for injury to his person (including death) and loss of or damage to his property occurring or arising while, or resulting from, being upon or about said right of way or other premises of the said MDOT, whether due in whole or in part to the condition or operation, negligent or otherwise, of said right of way, or in whole or in part to the acts or omissions, negligent or otherwise, of the officers, agents, servants, or employees of the said MDOT or otherwise. Further, the Permittee agrees to indemnify and hold harmless MDOT, its successors and assigns, from any and all loss, cost, claims, demands, damages, actions and causes of action, including attorney's fees, which the undersigned, his executor, administrator, heirs at law, next of kin and his successors and assigns, have, could or might have against the said MDOT, its officers, agents, servants, or employees, as well as its successors and assigns, for injury (including death) and loss of or damage to Permittee's property occurring or arising while or resulting from, being upon or about said right of way, or other premises, of said MDOT, whether due in whole or in part to the condition or operations, negligent or otherwise, of said right of way, or other premises or in whole or in part to the acts or omissions, negligent or otherwise, of MDOT, its officers, agents, servants, or employees, or otherwise.

I HAVE READ THE ABOVE RELEASE AND INDEMNIFICATION AGREEMENT CAREFULLY AND I UNDERSTAND THAT I AM ASSUMING ALL RISKS OF EVERY KIND AS SET FORTH IN SAID RELEASE IN EXERCISING THE PERMISSION GRANTED ABOVE.

Dated: November 29, 1993

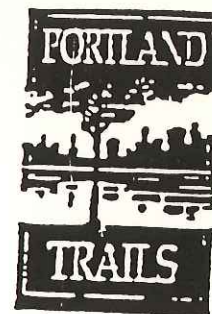
PERMITTEE

A. B. Hall

WITNESS

[Signature]
NAME

PORTLAND TRAILS



August 25, 1993

Phineas Sprague, Jr.
Maine Narrow Gauge Railroad
58 Fore Street
Portland ME 04101

Re: Eastern Promenade Rail-Trail Corridor - Maine Narrow Gauge
Railroad Location

Dear Phineas:

This letter is in response to your request for Portland Trails' comments on your proposed location of the Maine Narrow Gauge Railroad track along the base of the Eastern Promenade on the land which the Maine Department of Transportation (MDOT) will soon be acquiring via The Trust for Public Land from Canadian National Railway Company. As you know, Portland Trails along with The Trust for Public Land, the City of Portland and the Maine Department of Transportation have been working on this acquisition for over two years. We expect to close on the acquisition on August 30.

I think virtually everyone agrees that the acquisition of almost two miles of waterfront land in the City of Portland for public use represents a unique transportation and recreational opportunity for the City and for the State.

We assume that general questions regarding the Maine Narrow Gauge Railroad (e.g., general location, hours of operation, safety measures, etc.) are ones which will be discussed in the context of a public forum before the City of Portland Planning Board and the City Council with input from the citizens of Portland and neighborhood groups, including the Munjoy Hill Neighborhood Organization. Portland Trails' general position on rail and trail use of the Eastern Promenade Corridor is as follows:

1. Planning and improvement of the Eastern Promenade Corridor should be done once, done well, and done in a way which will fully utilize this magnificent opportunity. In this vein we think that several cross section drawings showing proposed

PORTLAND TRAILS
One City Center
Post Office Box 17501
Portland, Maine 04101

Phineas Sprague, Jr.
August 25, 1993
Page 2

locations of the rail line and adjacent trails at several points along the Corridor would be very useful.

2. The City of Portland will take the lead in organizing the plans for the Corridor, but will work with Portland Trails, MDOT, the Friends of the Parks, neighborhood groups, and other interested parties including the Maine Narrow Gauge Railroad and the Maine Olmsted Alliance.
3. Appropriately located, a rail line is compatible with adjacent pedestrian and bicycle trails.
4. The rail line should be located as close to the inland edge of the land being conveyed to MDOT as is technically and legally possible so as to provide ample room for a pedestrian and a bicycle trail and other recreational use of the waterfront between the rail line and the water. The only possible exception would be that portion of the proposed rail line which would pass through the 26-foot wide corridor next to City land leased to BIW.
5. Barriers between the trail corridor and the rail line, if any, which may be required for reasons of public safety should be as unobtrusive as reasonably possible.
6. The rail line should not extend onto the old trestle and swivel bridge until such time as the swivel bridge is fully operational.

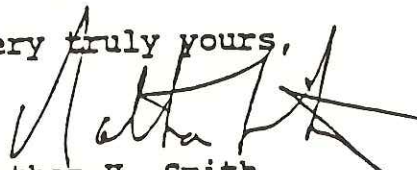
As a practical matter, what this means is that we believe that the rail line should be on the inland side of the trail Corridor from a point about 900 feet easterly from the end of Commercial Street all the way to the railroad trestle.

While Portland Trails' preference is that any installation of tracks follow more complete planning, we recognize that you are under some time constraints to get a portion of the railroad operating. Assuming you can reach agreement with MDOT and obtain appropriate approvals from the City of Portland, perhaps an initial section of track could extend south to Commercial Street and north toward Fish Point from the Portland Company property before final plans are set for the entire Corridor.

Phineas Sprague, Jr.
August 25, 1993
Page 3

Finally, would you please keep us advised of your plans for the rail line location as they evolve.

Very truly yours,



Nathan H. Smith
Vice President
Portland Trails

cc Peter Monro, President, Portland Trails
Joseph Gray, Director of Planning and Urban
Development, City of Portland
Virginia Hildreth, Director of Economic Development,
City of Portland
Allan Bartlett, Maine Department of Transportation
Ed Ashley, Maine Narrow Gauge Railroad ✓

CITY OF PORTLAND

June 14, 1994

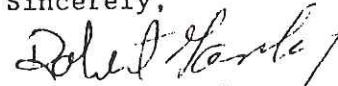
Mr. John P. Wirtz
45 Eastern Promenade
Portland, ME 04101

Dear Mr. Wirtz:

I have received your letter dated June 10, 1994, regarding the trail along the Eastern Promenade. You are certainly correct in your recollection of my comments on the subject at the workshop last fall. The reason that I raised the issue at the time was I had a concern that the Narrow Gauge Railroad was getting too much attention, and people were forgetting that it was not the reason that we bought the land in the first place. I still feel that there is a possibility that the two uses can be compatible; however, I never targeted that area for the Narrow Gauge Railroad. My support of bringing the Narrow Gauge Railroad to Portland was certainly not intended to have any negative impact on our proposed trail system, which we had been working on for several years.

The reason that the City of Portland acquired the Eastern Promenade property from Canadian National was to work with Portland Trails in providing public access and walkway to the ocean front property. Together, we have been talking to Canadian National for the eight years that I have been in Portland. We were most recently successful in completing the transaction, thanks in a large part to the intervention of the Trustee for Public Lands. I may point out that Mr. Sprague never participated in any of the attempts to acquire this property, nor did he provide any support to the City of Portland in its endeavors. His use of this land is a subordinate one to the trail system and certainly will have to be terminated if it has any negative impact on our ability to allow the public to use that property.

Sincerely,



Robert B. Ganley
City Manager

RBG/s

pc: Joe Gray, Director of Planning & Urban Development
File

TRAIN McCLOCI, WPE

FAX(207)774-7035
FAX TRANSMITTAL FORM

DATE: February 9, 1994

FROM: PHINEAS SPRAGUE, JR.

TIME:

RECEIVING FAX NUMBER: (617)565-4939

PLEASE DELIVER THIS FAX TO:

Molly Magoon
U.S. EPA
1 Congress Street
Boston,
MA 02203

THERE ARE PAGES IN THIS TRANSMISSION INCLUDING THIS COVER.
Please contact us immediately if there is any problem with the
transmission.

Dear Molly,

Thank you for calling us regarding the Maine Narrow Gauge
operation in Portland.

Over the past year we have been fielding questions from the
Portland community regarding the Maine Narrow Gauge. The
sentiment is overwhelmingly positive if not enthusiastic, but as
with anything "new" appropriate questions are raised which
require appropriate answers. This report reflects in a
preliminary sense how we have been addressing the most persistent
questions and misconceptions.

We offer this working discussion as an effort to provide you with
insight into our preparedness to respond to these questions. The
most significant purpose of the report is to allow you to
identify areas where you are not satisfied with our responses and

to engage you in a dialogue and guidance in areas where there are additional questions which you would like addressed or areas where you feel more specific information is needed.

The initial stage of the operation in Portland will be on the Maine Department of Transportation's rail corridor which starts at the intersection of India Street and Commercial Street and ends at the Railroad Bridge before the sewer plant. The short length of track is to be integrated into the comprehensive plan for the waterfront park, bike path and walking path.

If we are going to be successful in establishing Portland as a destination location, the adequate parking of our guests will always need to be considered. We hope that the City will continue to make parking available in the lots which it recently purchased.

Question #1. What about environmental impact such as Smoke?

The steam locomotives do use coal. They were designed to use bituminous (soft) coal. These are very small locomotives and there are only five Maine Two-Footers left in the world.

We also have two diesel locomotives and two gasoline locomotives. Preparing and running a steam locomotive is labor intensive and therefor it is unlikely that Steam Locomotives will be run on a daily basis for one or two trips. It is more likely that they will be used on weekends special events or holidays when numerous trips can be scheduled.

When the trains are running under a full load they use between six and eight shovels full per mile. If a train makes eight trips a day pulling twelve cars this translates to a consumption of 544.00 pounds of coal to move 3,264 people. 2.72 oz. per person. My car uses 0.28 gal for the same distance for 6 people, to move the same number of people my car would make 544 trips and use 152.32 gallons of fuel.

It is difficult to efficiently retrofit these historical pieces for alternative fuels with out ruining the engines. At some future date we will contemplate retiring these engines. They will become too valuable as artifacts to justify continuing use. New engines which might be replicas will be designed using the best practices of modern combustion technology and or alternative fuels.

Until we have new engines, we intend to be very sensitive to "smoke" concerns. Smoke delights railfans and is a common factor in Railroad photos because it gives photographs life and the equipment a sense of motion. A photograph of a smoking locomotive is either the product of deliberate introduction of contaminants into the fire box, poor firing practices, improper fuels, or inefficient operation of the engine.

Smoke is an immediate indication and represents sloppy practices. Properly fired locomotives do not make significant amounts of smoke. Some of the steps which we intend to take are as follows:

Source of Coal:

We will effect the basic characteristics of the combustion by seeking out a more expensive coal which is clean burning and has low sulfur content. Some of these coals, which other Railroad Museums use are from the New River seams in Beckley, West Virginia.

Tower Fuel Company of 1939 Waukeegan Road, Glenview, Illinois 60025 (708)729-2430 is a source of Metallurgical Coal. They participate with the following steam railroad museums who are members of the Tourist Railway Association.

California State Railroad Museum	Sacramento, California
Henry Ford Museum	Dearborn, Michigan
Huckleberry Railroad	Flint, Michigan
Illinois Railway Museum	Union, Illinois
Indiana Railway Museum	French Lick, Indiana
Michigan State Trust for Rail Preservation	Owosso, Michigan
Mid-Continent Railway Museum	No. Freedom, WI
Minnesota Transportation Museum	Minneapolis, Mn
National Park Service	Scranton, Pa.
Valley Railroad Company	Essex, Conn

This list comes from literature which Tower supplied us.

Specification of Coal:

We will specify sorted, pre-washed and if necessary, oiled coal to minimize fine dust and particles.

Storage on site:

We will institute best practices to minimize the amount of coal stored on site.

Training:

Firemen will be trained and the best practices will be instituted to minimize smoke.

Perspective:

We had the #3 Monson locomotive steamed up and operating inside of a closed building within 15 feet of five hundred people having dinner. Dinner would not have been a joyful celebration if we had substituted an idling bus for the locomotive.

If an individual is concerned about the hazard from the smoke from our locomotive then I suggest a relative test. To bring into perspective from our own personal knowledge the difference between the combustion products, consider that I would bank the engine and spend the night closed in the engine house, if they will spend the night closed in their garage with their car running.

Because it is so difficult to prove a negative, I asked a mechanical engineer, William Petitjean, who is familiar with steam processes to put into human terms a brief comparison of how the Monson #3 ranks against other fuel combusting processes common to the Portland area. This is an extract from his proposed open letter which follows as an appendix.

"Before we begin several qualifying assumptions must be laid down: First, all combustion processes require air; this air is drawn from the atmosphere and is called ambient air. The relatively clean air is consumed in the combustion process and is exhausted back into the atmosphere as combustion products. We can assume that all combustion processes are, more or less bad for human health because they take clean air and turn it into unusable (for breathing) carbon dioxide and water. Second, some fuels and combustion processes are worse than others from the standpoint of pollution --- but we shall treat them all equally because this analysis would be many pages long if we tried to rank all combustion processes and fuels according to their minute effects on the atmosphere and human health. Third, since all combustion processes require air regardless of the fuel consumed, we shall make our comparisons on the basis of cubic feet of combustion air consumed so all processes can be viewed in a fair

assessment that shows how each process contributes to air contamination.

If we look at the life of the greater Portland area for one 8 hour day, we find the following things happening:

If the Monson #3 were running all day and using 40# of coal a mile (This number reflects mountainous terrain, twice the amount predicted since the land is flat.) The Monson #3 Locomotive would consume 265,170 Cubic feet of air while it pulled it's little train about thirty miles a day.

22 average automobiles running around the Portland area all day will require the same amount of combustion air as the Monson #3. How many Cars per day are running around the Portland Area?

4 average semi-truck combinations running in the Portland area all day will require the same amount of combustion air as the Monson #3 locomotive. How many semi-trucks per day are running through the Portland area?

One 737-300 commercial jetliner will consume as much combustion air as 6 Monson # 3 locomotives while taking off and climbing to cruising altitude. How many jetliners per day are taking off from Portland International Airport?

71 residential wood stoves require the same amount of combustion air per day as the monson #3 locomotive. How many residential wood stoves are operating in the Portland area on any given winter day?

These comparisons are not meant to cast one process as being better than another, thus creating great controversy; they are meant to show how the the Monson #3 ranks with it's fuel combusting brethren inside the Portland area. We feel that the value obtained from the Monson#3's comparatively minuscule degradation of Portland's air quality is a better understanding of how far we have come in the relative ease and convenience of modern fuel burning devices; and how much we now know about combustion and it's consequences compared to the early twentieth century when the Monson #3 was built.♦1♦

Question #1a: What about the health impact of particles in the air?

Under controlled circumstances, our external combustion engine results in fairly complete combustion of the coal. When the oxygen/fuel balance is thrown off. For example in an emergency if the throttle is closed quickly the fire becomes starved for air and until the fire stabilizes there will be visible smoke. The smoke it produces is comprised of large particles which are easy to see. These particles are principally carbon and ash, opaque and black, too large to stay suspended in the air. While no one should expose themselves to any extra particles the current debate referred to by Mr. Wirtz is primarily over respirable particles and molecules which are produced by internal combustion engines, most specifically diesel engines and which are of sub micron size and are freely suspended in the air and therefore do not settle out. Since the internal combustion process is not complete these suspended particles which are not visible because of their size contain unburned fuel, complex hydrocarbons, fuel additives, sulfur, heavy metals such as lead and so on. These are not particularly good things to breath and because of their small size they stay suspended in the air until a cleaning mechanism such as rain or moisture vapor as we have in our lungs captures them.

Our Member Dr. Gill Wilcox has spoken to Dr. George Bokinsky who is a pulmonary specialist at Maine Medical Center. Dr. Bokinsky is an authority on the health hazards relating to respirable particulates. He is willing to address the Council but I will attempt to paraphrase his advice.

Respirable particles and pollutants are the by product of any combustion process. Pollutants are gases which are molecules and particulates. He does not feel that the operation we propose poses a health hazard.

1. The source is moving and therefore concentrations of pollutants will be low.
2. We are contemplating small amounts of combustibles.
3. The combustion products of the fuel (coal).
 - a) has no nitrates.
 - b) has no unburned organics/ hydrocarbons.
4. Particulate contribution is low. (The fly ash which is in the fire box might become a source of airborne

particulates if disposed of in a way that would allow them to become become wind born.)

The primary air pollution concerns are:

1. Sulfur Dioxide
2. Hydrocarbons
3. Nitrates
4. Ash/flyash
5. Cinders

The worst health hazards are Sulfur dioxide and nitrates. Nitrate pollution is associated with internal combustion engines. Sulfur dioxide is a by product of coal combustion.

It is interesting to note that steam era locomotive engineers had extraordinary logevity often working into their eighties. This became such a pervasive problem in the industry that mandataray retirement at age eighty was instituted in the 1950's.

Question #2: What about Noise?

Gasoline engines, and diesel engines are internal combustion engines which use an explosion to create the expanding gasses which push against the piston and convert fuel to rotary motion. We all know how much noise an automobile, truck or lawn mower makes. Most people are too young or don't remember how quite steam is. The Monson #3 locomotive is an example of external combustion. The flame is outside of the boiler tubes and relatively silent. In this process we heat water and generate steam which is released into the pistons the pressure forces the piston back and turns the wheels. When the train is not moving there is a barely audible hiss of escaping steam and when the train does move there is a slight "cough" when the steam is released from the cylinder. It is disingenuous to make statements about bothersome noise emitting from the operation of the engine. This is particularly troublesome to address as an honest issue when one considers the actual sound produced, the topography of the hill which reflects noise away from the city and distances from houses.

We can show using the cities own data that the noise levels are beneath the ambient noise levels of the harbor and the streets. Our research shows that the whistle is generally accepted as "fun" and not obnoxious♦2♦. We intend to be considerate of our neighbors, if over time, there becomes a problem then this issue

can be readily addressed through changing the whistle and throttling the steam supply to it or even substituting another type of signaling device.

Question #3 What about Public Safety?

Public safety is of utmost concern and can be easily and confidently addressed. We have the depth of experience in our membership to understand and adequately address public safety issues. Our First Superintendent has made many contributions in rule making for both the State of Maine and the Federal Rail Authority. I think that in the absence of a plan for the park which plan should be available for inspection in the Spring, this issue becomes one of applying common sense and personal experience to the operations of this equipment and similar equipment.

There are no fences or barriers at Edaville and in 46 years and over 10,000,000 riders gathering around the tracks here has not been a serious accident.

Most of us are familiar with cities which have light rail systems which operate satisfactorily at much higher speeds than we are contemplating. These systems are on the streets, in the parks, next to the paths and in much more relatively dangerous situations than contemplated here.

Most of us drive our cars on crowded highways at breakneck speeds. We ride our bicycles on the streets and walk along the roads on the side walks, in the parking lots we accept the risk of being next to moving vehicles, most of them traveling at much higher rates of speed than our museum operation contemplates. We have become accustomed to trust that the driver has the vehicle under control and will not swerve out of his lane or up onto the side walk.

The track speed contemplated is up to 15 miles an hour. This is the same speed as one finds posted on roads in school zones when children are present.

Question #4 What about Handicapped Accessibility?

Edaville has always been handicap accessible. We intend to have equipment available for every train. The configuration of the

combines and the cabooses lend themselves to use with wheel chairs with out significant modification. We have a founding member who is in a wheel chair. I made the commitment to him a year ago that we would be an asset and a resource to the handicapped community. I will be asking him to represent the interests of that constituency.

Question #5 What about opposition from Munjoy Hill.

In the Munjoy Hill Observer there recently appeared a negative guest editorial by John P. Wirtz. I have met with Mr. and Mrs. Wirtz on two occasions to discuss their fears. Recently in my office went over with him in detail his comments. He lives on the street side of the Portland House and told me that he didn't personally hear or see the "smoke" from the engine but was representing individuals who did and that he further declined to reveal who they were. There has been only two other letters to the editor in the Portland Press Herald, one was written by Mr. Moulton and the other was written by Mrs. Wirtz.

We have carefully examined the issues that Mr. and Mrs. Wirtz have raised and have addressed them in writing for inspection. We will never appease the Wirtzs but in addressing the concerns that they raise we allay the fears that they attempt to use as a tool to radicalize the neighborhood.

The Wirtzes have not been able to galvanize any support in spite of their tactics and in fact the Mrs. Wirtz was the only negative speaker at the City Council Public Hearing specifically on the Railroad and it's plans. Because we had addressed the concerns publicly and directly her comments were that she just didn't want the rail use. Subsequently at the Planning Board site plan review for the Museum there were no negative speakers and Mr. Wirtz simply asked for the number of employees we projected.

After the Wirtzes were unsuccessful in Portland they have mounted a mailing campaign to anyone who they thought would listen to a well constructed letter smoothly voicing the concerns that have already been addressed locally. We have had the opportunity to address reasonable inquiries from agencies we had no idea existed, and we have done our best to respond to the questions although they have been addressed in several other forums. While acknowledging the Wirtzes agenda and ability to get the questions repeated, they are at face value valid and reasonable concerns that should be satisfactorily addressed to any individual who becomes concerned. I have found that

responding to these concerns has been a useful exercise because in the final analysis, through the efforts of the Wirtzes, we have had an opportunity to be thoroughly reviewed and there will be no agency which has not been informed about our minuscule operation here.

I would be pleased to give you a tour of our operation if that would give you a better feeling for our impact. If there are any responses here which you might wish an expansion upon please ask. We would like to be armed with thorough answers to any questions that might arise.

Yours truly,

Phineas Sprague Jr,
President

Following is a calculation for the air volume calculations and an analysis of the type of high grade coal we would be using.



RAILROAD Co.
&
MUSEUM

May 16, 1994

58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

Norman Anderson
American Lung Association
128 Sewall Street
Augusta,
ME 04330

Dear Mr. Anderson,

I have been given a copy of your letter of May 4, 1994 to Robert Ganley, City Manager of Portland. We have never shied away from acknowledging the legitimate concerns which you express. In the record we have been quick to acknowledge that no combustion source produces exhaust which is good for an individual to breath.

We have been searching for answers to the questions you pose both from the medical community, engineering and in the way that common sense addresses issues of incremental risk.

One of the constraints we have placed upon our responses is that we would like to take the highest road. Our responses to questions have to be both technically correct to pass peer review and understandable to the general public. This balanced process is being driven by citizens alerted to potential concerns by organizations such as yours. Your letter is being widely circulated and is the only harshly negative letter which we have had the opportunity to respond to.

We have a number of doctors who have been advising us on precisely the issues you have expressed specific concerns about. I would appreciate the benefit of your thoughts in a more technical form regarding the issues that you raised so that we can address them both quantitatively and in a way that the general public can relate to.

We realize that we can not adequately address issues brought forward by individuals whose underlying motivation is that they "just don't want the railroad". However, we welcome concerned individuals who would work with us in a positive way to establish sensible criteria for the best management practices. I hope that you will count yourself among the group that is concerned but would like to work with us in a positive way.

I placed a call to you today and I am looking forward to hearing from you.

Yours truly,

A handwritten signature in cursive script, appearing to read "Anne Soren", is written over the typed name "Anne Soren".

Barbara A. Vestal
7 Fore Street
Portland, Maine
May 24, 1994

Portland Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Proposed Temporary Track, Maine Narrow Gauge Railroad, 58
Fore Street

Dear Planning Board Members:

As an across-the-street abutter to the site of the Maine Narrow Gauge Railroad museum, I am concerned about the impact of the proposed museum expansion on my residence and on my neighborhood. My specific concerns at this workshop stage are as follows:

1. **Air emissions:** The type of fuel used to power the train will make a great difference in whether this proposed expansion will be compatible with the adjacent pedestrian trail and residential neighborhood. It is my understanding that it would be possible to convert an engine to run on relatively clean-burning natural gas for approximately \$10,000. This is a small price to pay to resolve this problem in comparison to the \$800,000 reported to have already been invested in this project. I believe the Planning Board should impose a condition requiring the use of natural gas as the sole fuel used to power the train.

Well in advance of any public hearing, I believe the Planning Board should require the applicant to specify precisely what type of fuel it proposes to use. Until this is done, the public is unable to properly evaluate and comment on this issue. If the applicant is proposing to use a fuel other than natural gas, I believe the Planning Board should also request that the applicant provide it and the public with information about the feasibility of using natural gas as an alternative fuel.

2. **Noise:** Regulating noise emissions is critical to fitting this industrial type of use into a residential neighborhood. It will also be a key determinant of whether the trail system will provide a high-quality experience for

pedestrians who seek to enjoy the beauty of the Casco Bay shoreline in relative solitude. Based on our experience with the BIW drydock in that vicinity, noise seems to be amplified by the water and travels unimpeded into the adjacent residential area. I believe that it is imperative for the Planning Board to obtain appropriate information from the applicant about noise-generating activities and to take sufficient time to craft appropriate restrictions to minimize noise impacts on the neighborhood.

To have adequate information to review impacts and impose appropriate conditions, the applicant should be requested to provide information to the Planning Board and the public, well in advance of any public hearing, detailing precisely where it is proposing to lay the temporary track; the estimated noise levels from normal train operation; maximum noise levels projected from all associated activities, and at what times whistles or other warning devices will be used (i.e., each time the train starts up, crosses the access road to the marina, comes to the end of the temporary track, changes direction, etc.) Noise data collected by Doug Mason of the City planning staff in 1981-82 in several immediately abutting sites should be consulted to compare the projected noise to the baseline information.

I am particularly concerned that the Planning Board impose restrictions on hours of train operation so that this aspect of the museum use will not interfere with residents' right of quiet enjoyment of their homes nor interfere with the ability of pedestrian users of the trail to find times to use it in relative peace. It would seem reasonable to allow the train to operate only from 10:00 a.m. to 4:00 p.m.

In addition to specifying hours of operation, I believe the Planning Board also needs to impose carefully crafted restrictions specifying maximum noise limits. As Board members may recall, this would be similar to the process previously utilized when the Board reviewed the BIW drydock project and the industrial rezoning precipitated by Merrill Marine Terminal's proposed cement silos. Specific conditions are necessary to mitigate noise impacts; it would be completely inadequate to rely on the noise provisions in the existing zoning ordinance because 1) the proposed track will probably span two or more zones, some of which do not even have existing noise provisions; and 2) the noise with greatest potential impact is from the whistle, a "warning device" which might be exempt from the existing noise standards.

The Board should also explore whether the frequency of use and decibel level of the whistle exceed what would otherwise be required for safety in this particular applica-

tion. If so, the Planning Board should impose a condition restricting the frequency of use and decibel level of the whistle. The fact that this train will be operating much below the speeds it was designed for should mean that the whistle need not be heard as far away. This should allow the applicant to muffle the whistle so it is only heard in the immediate vicinity of those who need to be warned of its passage without any compromise in its safety function. The applicant should not be allowed to impact a residential neighborhood by using an unnecessarily loud whistle as an advertising device to attract potential riders from the Old Port.

Please note that I believe it is important to address all three aspects -- hours of operation, maximum noise levels, and use of the whistle -- in order to mitigate noise impacts. Merely restricting hours of operation is not sufficient. Many residents in the immediate vicinity are elderly and will be at home during even restricted hours of operation.

3. **Water-dependent Uses:** The Planning Board should also take care in applying the "no adverse impact on marine uses" standards (14-320.55) of the Waterfront Special Use Zone. As an expansion of a museum use in this zone, the proposed use would need to meet these standards. Clearly the museum is a non-water dependent use. Its siting or expansion cannot substantially reduce or inhibit public access to marine waters by users of the pedestrian trail.

4. **Environmental Impacts:** It is my understanding that no permits are required from the Department of Environmental protection for this phase of the project, so no environmental reviews will be performed unless requested by the Planning Board. While I recognize that an active train was in this corridor until several years ago, it might be prudent to determine whether this area is now acting as habitat for any particularly high value wildlife. The Board could direct the planning staff to contact Maine Inland Fisheries and Wildlife and the Department of Marine Resources to see if there is any readily available information on this site.

5. **Completion Bond:** It is my understanding that the applicant has stated that it will make any required modifications to the proposed temporary tracks to make the tracks consistent with the final plan for the trail corridor. It is further my understanding that the applicant is proposing to rely to a large extent on volunteer labor to complete the initial installation. It is critical that a completion bond or similar guarantee of performance be posted so that there

Portland Planning Board
May 24, 1994
Page Four

are sufficient funds to modify this temporary installation, if required. This is a key element of Portland's shoreway access system. It should not be compromised by the prospect that in the future sufficient volunteer labor may not be available to reverse any temporary installation.

6. Process/Timing: I also have concerns about the existence of a train in this vicinity at all, and concerns about the process of the applicant applying for temporary track installation prior to completion of the comprehensive trail planning process. While the Planning Board may not be able to deny the application on the ground that the applicant is short-circuiting the trail planning process, the Planning Board should clearly go on record that, if it grants this application, it will not be bound in future reviews by what is done under this application. The applicant should be put on express notice that it is proceeding at its own risk, and any investment made to install temporary track will be disregarded and will not be accepted as a limiting condition in future Planning Board actions.

Thank you for considering these comments.

Very truly yours,


Barbara A. Vestal

cc: Rick Knowland
Joe Gray
Natalie Burns

Barbara A. Vestal
7 Fore Street
Portland, Maine
May 24, 1994

Portland Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

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2. Noise: Regulating noise emissions is critical to fitting this industrial type of use into a residential neighborhood. It will also be a key determinant of whether the trail system will provide a high-quality experience for

pedestrians who seek to enjoy the beauty of the Casco Bay shoreline in relative solitude. Based on our experience with the BIW drydock in that vicinity, noise seems to be amplified by the water and travels unimpeded into the adjacent residential area. I believe that it is imperative for the Planning Board to obtain appropriate information from the applicant about noise-generating activities and to take sufficient time to craft appropriate restrictions to minimize noise impacts on the neighborhood.

To have adequate information to review impacts and impose appropriate conditions, the applicant should be requested to provide information to the Planning Board and the public, well in advance of any public hearing, detailing precisely where it is proposing to lay the temporary track; the estimated noise levels from normal train operation; maximum noise levels projected from all associated activities, and at what times whistles or other warning devices will be used (i.e., each time the train starts up, crosses the access road to the marina, comes to the end of the temporary track, changes direction, etc.) Noise data collected by Doug Mason of the City planning staff in 1981-82 in several immediately abutting sites should be consulted to compare the projected noise to the baseline information.

I am particularly concerned that the Planning Board impose restrictions on hours of train operation so that this aspect of the museum use will not interfere with residents' right of quiet enjoyment of their homes nor interfere with the ability of pedestrian users of the trail to find times to use it in relative peace. It would seem reasonable to allow the train to operate only from 10:00 a.m. to 4:00 p.m.

In addition to specifying hours of operation, I believe the Planning Board also needs to impose carefully crafted restrictions specifying maximum noise limits. As Board members may recall, this would be similar to the process previously utilized when the Board reviewed the BIW drydock project and the industrial rezoning precipitated by Merrill Marine Terminal's proposed cement silos. Specific conditions are necessary to mitigate noise impacts; it would be completely inadequate to rely on the noise provisions in the existing zoning ordinance because 1) the proposed track will probably span two or more zones, some of which do not even have existing noise provisions; and 2) the noise with greatest potential impact is from the whistle, a "warning device" which might be exempt from the existing noise standards.

The Board should also explore whether the frequency of use and decibel level of the whistle exceed what would otherwise be required for safety in this particular applica-

tion. If so, the Planning Board should impose a condition restricting the frequency of use and decibel level of the whistle. The fact that this train will be operating much below the speeds it was designed for should mean that the whistle need not be heard as far away. This should allow the applicant to muffle the whistle so it is only heard in the immediate vicinity of those who need to be warned of its passage without any compromise in its safety function. The applicant should not be allowed to impact a residential neighborhood by using an unnecessarily loud whistle as an advertising device to attract potential riders from the Old Port.

Please note that I believe it is important to address all three aspects -- hours of operation, maximum noise levels, and use of the whistle -- in order to mitigate noise impacts. Merely restricting hours of operation is not sufficient. Many residents in the immediate vicinity are elderly and will be at home during even restricted hours of operation.

3. Water-dependent Uses: The Planning Board should also take care in applying the "no adverse impact on marine uses" standards (14-320.55) of the Waterfront Special Use Zone. As an expansion of a museum use in this zone, the proposed use would need to meet these standards. Clearly the museum is a non-water dependent use. Its siting or expansion cannot substantially reduce or inhibit public access to marine waters by users of the pedestrian trail.

4. Environmental Impacts: It is my understanding that no permits are required from the Department of Environmental protection for this phase of the project, so no environmental reviews will be performed unless requested by the Planning Board. While I recognize that an active train was in this corridor until several years ago, it might be prudent to determine whether this area is now acting as habitat for any particularly high value wildlife. The Board could direct the planning staff to contact Maine Inland Fisheries and Wildlife and the Department of Marine Resources to see if there is any readily available information on this site.

5. Completion Bond: It is my understanding that the applicant has stated that it will make any required modifications to the proposed temporary tracks to make the tracks consistent with the final plan for the trail corridor. It is further my understanding that the applicant is proposing to rely to a large extent on volunteer labor to complete the initial installation. It is critical that a completion bond or similar guarantee of performance be posted so that there

are sufficient funds to modify this temporary installation, if required. This is a key element of Portland's shoreway access system. It should not be compromised by the prospect that in the future sufficient volunteer labor may not be available to reverse any temporary installation.

6. Process/Timing: I also have concerns about the existence of a train in this vicinity at all, and concerns about the process of the applicant applying for temporary track installation prior to completion of the comprehensive trail planning process. While the Planning Board may not be able to deny the application on the ground that the applicant is short-circuiting the trail planning process, the Planning Board should clearly go on record that, if it grants this application, it will not be bound in future reviews by what is done under this application. The applicant should be put on express notice that it is proceeding at its own risk, and any investment made to install temporary track will be disregarded and will not be accepted as a limiting condition in future Planning Board actions.

Thank you for considering these comments.

Very truly yours,



Barbara A. Vestal

cc: Rick Knowland
Joe Gray
Natalie Burns

May 24, 1994
54 Eastern Promenade
Portland, Maine

Chairperson
The Planning Board
The City of Portland
Portland City Hall
389 Congress St.
Portland, Me.

Ladies and Gentlemen,

It is my understanding that the Planning Board of the City of Portland will be holding review sessions to discuss the development of a Narrow Gauge Railroad track along the foot of the Eastern Promenade. My letter will speak in favor of such a proposal.

First let me say, as a resident of the City of Portland, I believe that the construction of such a railway along the base of the Prom will represent a great "drawing" feature to our community. Such an attraction is really quite unique and will certainly create an image for our city that will attract visitors and at the same time support our business community.

Second, as a resident of Munjoy Hill with a personal residence on the Promenade, I have no concerns with the alledged "contamination" of the area by the train's engine.

I am told that the train's engine will be burning low sulfur content coal and as such I am sure that the miniscule of smoke that emanates from such a vehicle will quickly be dissipated by our "windy hill!"

Therefore let it be known that my wife and myself strongly support the proposal under consideration and hope that the Planning Board in its wisdom and consideration for the future of Portland will approve such a concept.

Respectfully submitted

Robert W. Wilhoite MD
Robert W. Wilhoite M.D.

RECEIVED

MAY 25 1994

PORTLAND PLANNING OFFICE

Rodney S Quinn, 45 East Promenade, Portland, ME 04101 (207) 761-4514

May 20

Joseph E Gray Jr.
Director of Planning and Development
City Hall, Rm 211
399 Congress St, Portland

In reference to the proposed installation of a narrow gauge railway adjacent to or on the eastern Promenade:

As abutters and residents, my wife and I would like to register our objections. Our reasons in brief:

A train "ride" would be out of character and not be in keeping with a community place of rest and family recreation -- it is an entertainment and commercial venture little different than ferris wheels, merry go rounds and the like.


It is essentially a tourist attraction. It seems doubtful that Portland residents would be willing to consistently repeat the thrill of a ride very many times, leaving its use, after an initial curiosity, to visitors. The basic purpose of Portland Parks should not be to "attract tourists".

It would pollute an already marginal atmosphere with noise and smoke.

It would be dangerous, particularly to children, elderly, handicapped, and pets.

This equipment is antique and difficult to keep up, and despite its nomenclature of "narrow gauge", weighs tons. Both the equipment itself and the road bed will require a great deal of maintenance when in regular use. We have heard little about firm longterm finances for such protection, and we doubt that firm guarantees can be given by the promoters.

Sincerely,


Rodney S Quinn

RECEIVED
MAY 24 1994
PORTLAND PLANNING OFFICE

7 Gilbert Lane
Portland, ME 04101
May 17, 1994

Joseph E. Gray, Jr.
City Hall, Room 211
329 congress Street
Portland, ME 04101

Dear Mr. Gray,

As a homeowner and resident of Munjoy Hill in Portland, I am quite concerned about the proposed railroad line along the former Canadian National Railroad right-of-way. Noise and pollution are two concerns. Another is the negative effect I believe it will have on the planned bike and walking trail along that same route.

I have been quite excited about the trail providing a quiet place for cyclists and walkers to get away from the bustle, noise and pollution of engine powered vehicles. The installation of a railway along side the trail seems to defeat the purpose.

I am strongly opposed to this proposal, and I urge you to consider the adverse effects this proposed railway will have on the trail and on the surrounding neighborhood.

Sincerely,


Barbara Carter

RECEIVED

MAY 20 1994

PORTLAND PLANNING OFFICE

Chris & Susie Blake
RR 1, Box 4833
Camden, ME 04843

207-236-2550
Fax: 236-7002

May 17, 1994
Joseph E. Gray, Jr.
Director of Planning and Urban Development
City Hall, Rm 211
389 Congress Street
Portland, Me 04101

Dear Mr. Gray,

Just a note to make a comment on the narrow guage railroad being considered for the area of the Eastern Promenade. I own two condo's in the Portland House and am an interested party.

I want to support the concept and implimentation of this plan. I think it's a great way to use land, which now lies unused and not good for much, in the public interest. Anything which supports the kind of industry and effort which these characters have shown is a good thing in my book.

I have no fears, whatsoever, about noise or air pollution. And anyone who tells you they have such fears is uninformed and most certainly has gotten up on the dark side of bed on that particular morning.

This whole thing can be nothing but a positive and intruguing addition to our neighborhood and the City of Portland. I have no fears about lost property values or any of the rest of it; and am in support of the project.

My only concern for the project is that it is given adequate security. I would hate to see such a thing defaced or vandalized.

Thanks very much.

Cordially,

Christopher Blake

Christopher Blake

(of Christopher Blake and Cornelius Ferguson IV, TRS)

1 St. Lawrence Street
Portland, Maine 04101
May 20, 1994

Chairwoman Jadine O'Brien
Portland Planning Board
City of Portland
City Hall
Portland, Maine 04101

Dear Chairwoman O'Brien,

It is with some reluctance that I once again express my views on the narrow gauge and Portland Trails combined project. I do not want to re-enter the fray once again that can develop when one takes a positive and public position about the narrow gauge railroad at the base of Munjoy Hill.

A very small group of dissenters led by Mimi and John Wirtz has struggled for some time now to come up with a strategy on which to hang their "Stop the Train" hat. This campaign has jumped from strategy to strategy to strategy trying to find one that is creditable enough to stick. Initially, they waged a written war of words personally attacking some who publicly supported the narrow gauge, including me. When that campaign didn't stick, it teetered along in search of a different strategy to try and topple the train's momentum. Speed of the train became an issue of concern until it was repeatedly and publicly stated that top speed of the trains will be 15 miles per hour. When speed was resolved, noise became an issue of concern even though it has been repeatedly stated that there will be only three trains running during the middle of the day. I am pleased that the leadership of the narrow gauge has made these and other obvious efforts to accommodate the issues of concern expressed by the dissenters.

However, the unwillingness of this group to accept compromises made in good faith and to try to continue to derail the narrow gauge has failed to gain wide public support - from a community of about 6,600 residents on the Hill. This constant search for a strategy to cause a train wreck won't succeed! It won't even leave the station because it is rooted in self-serving goals and not the greater good of the community. I think that the facade of altruism is only a smoke screen for the selfish goals of this small group.

Up until last month, I wrote for and served on the editorial board for the Munjoy Hill Observer. This was my third year at it. I quit because I got exhausted from being winged in the cross-fire that erupted from this tiny group whenever a positive article appeared

May 20, 1994

in the Observer about the railroad and its status before city boards, such as this one. I can't be convinced of the altruistic motives of those behind this hodge podge campaign to derail the narrow gauge.

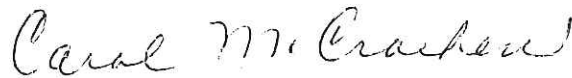
It's getting increasingly harder to respect a campaign to find a campaign to find a strategy that has been underhanded, personal, unfocused and grasping at thin straws if not struggling for air to stay alive. It is a desperate campaign to scare our neighbors on the Hill through negative publicity and repeating misinformation at every public opportunity.

The implementation of a tourist train would give a wonderful economic boost to the Old Port area. Shops and restaurants would benefit and jobs would eventually be created much as they were when the railroad was the Edaville in South Carver, Massachusetts. This railroad would also improve the level of pride in the community as the home of the famous narrow gauge - a good change and a real "shot in the arm" to the Hill.

Change is hard. It is very hard. It is easiest sometimes to resist it and fight it. One Portland Trails official told me last fall of his vision for Maine that included people living on wages earned in "cottage industries." I dare say that not everyone shares that vision for Maine. As the 20th century approaches, I want to live in it and be a part of it. I don't want to be left behind in a cottage somewhere on the Hill knitting Munjoy Hill brand shawls, hooking rugs and crocheting doilies as a means of survival. I don't want to live in the past and I honestly believe that the overwhelming majority of Munjoy Hill residents agree. Otherwise, there would be roughly 3,000 people protesting the train.

Thank you for reading my views!

Sincerely,



Carol McCracken

cc: Planning board members

June 14, 1994

Mr. Richard Knowland, Senior Planner
 City of Portland Planning Department
 City Hall
 389 Congress Street
 Portland, ME 04101

Re: Maine Narrow Gauge Railroad Amended Site Plan Submission

Dear Rick,

Attached please find our submission, made on behalf of MNGRR, for staff and Board review at the June 28 public hearing. We have prepared the enclosed plans and written documentation in support of the application to install 3,400 feet of track in the MDOT rail corridor along the lower Eastern Promenade area.

As previously discussed with staff and the Board, the proposal is for a "temporary" installation of the tracks pending final design recommendations from the Eastern Promenade Trail Advisory Committee. The term temporary is used only in connection to the physical location of the track, and not to a time frame for duration of use of the rail corridor. As previously stated, the track will be installed and should the EPTAC recommendations advise a different location or alignment, MNGRR will move/realign the track at its own expense.

As you are aware, we will be meeting with the Historic Preservation Committee and the Trail Advisory Committee on the 15th to review the plans and secure a certificate of appropriateness. Please review this information and call if you have any questions.

This submission includes the following:

Narrative:	Drainage	Page 1
	Railroad Construction Plan	Page 2
	Railroad Operations Plan	Page 3
	Track Construction	Page 4
	Track Placement	Page 5
	Parking/Pedestrian Circulation	Page 6
	Air Emissions	Page 7
	Wildlife & Wetlands	Page 8
	Financial & Technical Capacity	Page 9
	Zoning Standards	Page 10
	Ordinance Narrative	Page 11
	Noise	Page 13

Drawings: #1
#2
#3
#4

Cover sheet
Track Alignment & Site Plan Details
Track Alignment & Site Plan Details
Track Alignment & Site Plan Details

Sincerely,



Stephen B. Mohr, ASLA

SBM/sd

Attachments

252knowInd2

DRAINAGE NARRATIVE

BACKGROUND

MNGRR is proposing to construct approximately 3,000 feet of new rail line in the existing 26 foot wide MDOT rail corridor along the eastern shore of the Portland peninsula. The proposed rails will be constructed on a base of 6" to 8" of crushed rock, and will be placed on the existing, compacted gravel base which occurs within the rail corridor. The total area to be utilized by the tracks will be 34,000 SF, inclusive of the ballast base, switches and connecting track to the museum.

EXISTING CONDITIONS

The rail corridor is currently imported, compacted gravel surface from Commercial Street to the Portland Yacht Services yard, and compacted railroad track base from PYS to the area off Fort Allen Park. From the southerly property line of PYS to the Portland House, there is some grass growing in the gravel base, and approximately 1,800 SF is lightly vegetated by these grasses and weeds.

The drainage from the rail corridor flows directly to the Fore River/Casco Bay. The existing gravel parking areas sheet drain to the Bay, as well as to being collected by two existing catchbasins within the graveled areas near BIW. In the corridor at Portland Yacht Services, the slight cross pitch of the terrain sheet drains the area toward Casco Bay. From PYS north, the drainage pattern flows westward to a swale at the base of the ledges at Fort Allen Park. The swales are drained by existing culverts which lead directly to Casco Bay.

POST-CONSTRUCTION CONDITIONS

The addition of the new ballast and track will not increase the runoff from the existing rail corridor. The compacted gravel soils are similar to the stone ballast, ties and tracks in runoff coefficient, and there will be no change in impervious area due to the existing conditions found in the rail corridor.

The location of the tracks will not impede the existing drainage patterns due to the location of the existing swales, drainage patterns, catchbasins and permeability of the ballast base used for the rail line. The construction of the line will not result in uphill ponding, flooding or drainage problems, and there will be no downstream impacts resulting from the track installation.

RAILROAD CONSTRUCTION PLAN

MNGRR is proposing to install the ballast base, ties and track utilizing volunteer labor and limited mechanized equipment. The sequence of operations will be to access the track area from Commercial Street, and through the Portland Engineering property. The track location will be verified by the MNGRR Operations Manager, Emmons Lancaster, P.E., and all construction activities will be monitored by Mr. Lancaster. The construction will consist of loads of ballast being sequentially dumped down the length of the corridor, and the ballast being spread by mechanical as well as hand labor. Once the ballast is in place, the ties will be set in the ballast, leveled and backfilled by hand. The final operation will be the placement of the rails, which will be installed in 30 foot sections.

MNGRR anticipates that the track will take approximately three to five weeks to install, and is proposing a schedule as follows:

- | | |
|--------------------------------------|-------------------|
| 1. Grade base area | June 30 - July 8 |
| 2. Install ballast base | July 10 - July 18 |
| 3. Install ties and rails | July 10 - July 30 |
| 4. Install over ballast between ties | July 18 - July 30 |

The volunteer labor are all friends of the MNGRR, interested public or trustees/members of MNGRR. They are all familiar with track installation techniques, and will be working under the direct supervision of Emmons Lancaster, P.E.

Agreements have been reached and the MDOT permit to perform the construction work is included with this submission.

RAILROAD OPERATIONS PLAN

MNGRR Co. is proposing to develop the railroad as a rail operation providing passenger service in the historic cars, a demonstration railroad and a historic restoration project. As a part of the museum, the train rides will educate the public about railroading in general, the history of railroads in Maine and the importance of narrow-gauge railroads as a part of the development of the State of Maine.

MNGRR will be operating 4 to 5 trains daily on the 3,400 feet of track, between the hours of 10:30 a.m. and 7:30 p.m. and will leave from the museum site. Tickets would be purchased at the museum, with boarding occurring at the railside area at the tracks near the museum. MNGRR will operate the train under certification from the State of Maine Department of Transportation as an excursion/passenger train service, and all operations will conform with the regulations of that agency.

The diesel locomotive will be utilized for the majority of the 30 to 35 weekly trips. The steam locomotive will be used 2 to 3 days a week for 2 to 4 of the runs. Under no circumstances will the steam engine be used for more than 40% of the trips, regardless of the total number of weekly excursions. The train will have between 2 and 8 cars attached to the locomotive, and will be capable of carrying up to 200 passengers. There are two cars accessible to the disabled, and all operations will be in conformance with MHRA and ADA standards.

The majority of the train operations will be conducted with the diesel engine, not the steam locomotive, so any fire hazard will be very limited by potential time of operation. The locomotive stack is constructed with a fire/spark arrestor to eliminate sparks exiting the fire box, and the engine will be operated by personnel trained for proper firebox operations. The railroad ballast will remove immediate fire danger from the track area, and regular maintenance will maintain the tracks to eliminate combustible materials in and around the tracks.

There will be limited use of herbicides in the area of the track ballast to protect the integrity of the ballast and to reduce the potential for fire hazard. Any application would occur, at the most, once a year. The use of the herbicide will comply with all State, Federal and municipal guidelines, will be applied by a licensed applicator, and will be selected to assure that it does not affect adjacent vegetation, shoreland habitat or groundwater.

TRACK CONSTRUCTION

MNGRR Co. proposes to construct approximately 3,400 linear feet of trackage from India Street to Fish Point. Although the "Narrow Gauge" Rails are only 2' wide, they are proposing to construct their railroad bed using 8-foot "standard gauge" railroad ties, for the following reasons:

1. The 8-foot ties have been recommended by MDOT because they would meet any future plans to convert the corridor to standard gauge trains. Additional ties may need to be added between each of the proposed ties, but that addition would be a minor addition.
2. If the corridor is converted in the future to standard gauge, the effect of the wider ties will be to avoid disturbance to the Eastern Prom trail. The proposed installation would avoid the expense and time involved with tearing up the 5' ties and replacing them with the longer 8' ties.
3. MNGRR Co. believes that by placing the 2' rails to the inland side of the 8-foot ties the remaining length of the ties and ballast would act as a physical barrier between the train and the trail's biking and pedestrian users. Due to MDOT requirements that no stationary objects can be placed within this 26' corridor, such as fences or posts, this proposal holds merit for increasing public safety near the tracks.

See Typical Track Cross Section, for graphic representation of ties and ballast.

TRACK PLACEMENT

The first phase of track placement has been defined as "temporary" track placement due to MNGRR's commitment to fully comply with E.P.T.A.C. master plan. Temporary has been used to define the location, not the length of time in services or duration of activities. MNGRR has agreed to shift the track alignment either vertically or horizontally to make the overall corridor as appropriate to bicyclists and pedestrians, as it will be to the train riders. The location of the tracks is as reviewed by Portland Trails, and leaves sufficient room within the right of way for other uses as proposed. MNGRR's proposal to lay over 3,400 linear feet of track is based on the desire to avoid the possible conflict areas along the corridor, otherwise referred to as "pinch points," and let the master plan dictate the future track alignment. Phase II of the track placement would involve additional track placement from Fish Point to the abandoned trestle bridge near the Back Cove.

The rail will be located as close to the inland edge of the MDOT corridor as is technically and legally possible, so as to provide the greatest area possible between the rail line and the water. The only exception to this track location will be the 300 feet of track ending closest to India Street. This alignment provides the most usable space for pedestrian circulation between the rail line and the 3 story Grand Trunk Building at 1 India Street. See attached Portland Trails memo for comments regarding rail location.

PARKING/PEDESTRIAN CIRCULATION

Parking and pedestrian circulation at the Portland Engineering site has been delineated and painted out at the site. The MNGRR Museum has been previously approved and includes 20 parking spaces. Parking for train ridership is estimated at approximately 15-30 parked cars at one time during a weekday, and 30-60 parked cars during weekends. Special events, such as rail fair, may attract up to 60-90 parked cars, at one time. The Portland Engineering Company complex has the capacity to hold these projected numbers based on the existing parking layout. See Parking Distribution Diagram for the Portland Engineering site.

The Rider Embarkment/Debarkment Zone has been designated on the site plan, Drawing #3. Pedestrian circulation has been painted from the Museum to the car storage yard and has been successfully used this spring. An additional crosswalk leading to the Embarkment/Debarkment Zone will be painted following plan approval.

Public Restroom Facilities are provided within the MNGRR Museum which will be used by visitors/riders of the MNGRR & Museum. Signage will be provided to denote restroom location and to direct museum visitors to the trains.

AIR EMISSIONS

The air emissions from the trains fall into an unregulated category; moving source emissions under the state/federal thresholds for pounds/types of emissions generated on an annual basis. Even if the trains were to be considered stationary, they are well under the current thresholds for licensing by the DEP Air Quality Bureau.

At the request of the Portland Planning Board, and in response to public and neighborhood concerns, MNGRR has had an Air Quality Modeling and Comparison report prepared by Susan Romatzick, of Paladin Environmental, who is also Instructor of the Environmental Technology Program at S.M.T.C. Susan's credentials are included under the Technical Capacity section of this Submittal, and her findings regarding air quality and air pollution from the locomotives follow this introduction.

Other input received via MNGRR Company and Museum regarding the process of coal combustion has been prepared by William L. Petitjean, a nationally renowned expert on combustion processes. The previously submitted Combustion Emission Comparisons have also been resubmitted as back up data on combustion and air consumption.

We have also attached information prepared by Dr. Gilbert Wilcox regarding the potential of health hazards, some of which has not been previously submitted.

WILDLIFE & WETLANDS

The area to be occupied by the railroad does not contain habitat of high value for wildlife or sea birds.

A complete survey of the site regarding unusual natural areas, wildlife and fisheries habitat, or archaeological sites located on or near the MDOT corridor has been performed by John Lortie, of Woodlot Alternatives, Inc., and is included in this submission.

FINANCIAL & TECHNICAL CAPACITY

The majority of the materials needed for the 3,400 linear feet of track construction, i.e. ballast, ties and rail, have been donated, or will be donated, pending final approval. MNGRR has all the ties and rail in their possession now. The labor involved to grade the corridor and lay the trackage will also be donated volunteer labor.

The value of the construction work is estimated at \$18,000 to \$24,000 inclusive of labor and materials. The value of the rails for scrap metal is approximately \$28,000 to \$30,000.

The Board of Trustees of the MNGRR Co. & Museum has appointed J. Emmons Lancaster as the first superintendent of the MNGRR. Mr. Lancaster will be overseeing and managing the construction and the safe, efficient operations of the trains. Other volunteers who will be involved with the construction and operation of the rail line also have numerous years of experience in track laying and train operating.

ZONING STANDARDS

The proposed track is located in three zoning districts, as well as the overlay shoreland zoning district. The districts are as follows:

Waterfront Port Development	(India St. to Portland Engineering)
Waterfront Special Use Zone	(Portland Engineering)
Recreation and Open Space	(Portland Engineering to Fort Albert)

Per the municipal ordinance and code enforcement office, train tracks are permitted uses within these zones, and are consistent with the types of uses proposed/found in these areas of the City.

With regard to Section 14-320.55 of the Portland Land Use Code, we submit the following:

The re-use of the existing MDOT owned railroad bed will not have an adverse impact on existing or future marine opportunities based on the following:

1. The proposed activities do not displace an existing water-dependent use;
2. The proposed uses do not reduce existing commercial vessel berthing space;
3. The proposed facilities, activities and related parking and improvements will not interfere with the operations and activities of water dependent uses, nor will they impede access to Casco Bay or vessel berthing. Existing access has not been blocked by the proposed project;
4. The siting of the new track and related facilities does not reduce or inhibit existing public access to marine or tidal waters. The proposed plans will increase public access to the pedestrian path adjacent to Casco Bay, and provide for additional opportunities to enjoy the Bay from the train.

ORDINANCE NARRATIVE

Section 14-525-C Portland Land use Code

1. On behalf of the Maine Narrow Gauge Railroad Co. (MNGRR) we submit the attached plans for amended site plan review, as set forth in the original site plan approval by the Board. MNGRR is proposing to install 2 foot wide tracks for the Narrow Gauge Railroad from India Street to Fish Point. This is intended to be the first phase of a track line which will eventually run from India Street to the Back Cove bridge.

MNGRR is proposing to locate the lines within the dedicated right of way approved by the State and City, and to place the tracks consistent with the needs of the railroad and the future pedestrian use of the right of way. The location of the tracks is as reviewed by Portland Trails, and leaves sufficient room within the right of way for other uses proposed by the City, MDOT and Portland Trails. No changes are proposed beyond the 10 to 12 foot wide corridor of the tracks.

The new tracks will be utilized for operating the existing engines and rolling stock outside of the immediate yard of the museum, and to provide limited passenger service for special events at the museum. The attached narratives specify the details of the train.

2. Total land area to be utilized by the train is 0.93 acres, all located within the MDOT corridor. MNGRR has an agreement with MDOT for the use of this area to operate the Narrow Gauge Railroad.

The 26' wide MDOT corridor is located in the waterfront Port Development Zone that extends from India Street to the Portland Engineering Co. complex. The corridor occupies .95 acres in this zone, .62 acres in the WSUZ zone and .45 acres in the ROS zone..

No building or accessory structures are proposed as part of this project.

3. Existing or proposed easements within the corridor consist in the form of crossings, either pedestrian or vehicular. Portland Yacht Services has formal agreements with MDOT for 2 vehicular crossings and 1 pedestrian crossing. Two other crossings are being worked out with the City and MDOT. MNGRR Co. has proposed approximate locations and has agreed to pay for the construction of crossings at the BIW facilities.

4. Solid waste generated by the MNGRR will be limited to fire box ash which will be disposed of in sealed containers.
5. The Portland Engineering Company complex is currently served by utilities such as sewer, water and electricity from mains located along Fore Street. The train will not require additional sewer, water or electric services.
6. See Drainage Narrative.
7. See Construction Plan.
8. No state or federal regulatory approvals are pending, or required.
9. See Financial & Technical Capacity narrative.
10. A draft copy of the lease agreement between the Trust for the Preservation of Maine Industrial History and Technology and the MDOT has been submitted to Gary Wood, City of Portland, for his review. Phineas Sprague will be meeting with him within a week to finalize the terms and agreements. A final copy of the lease will be submitted after final approval.
11. See Wildlife & Wetland narrative.

NOISE

Sound types and levels found in the area of the Museum are typical to those found in both residential and industrial waterfront areas e.g.: boat whistles, fog horns, machinery, diesel engine automobile traffic, childrens' voices. Much of this noise falls within the range of 50 dB (Residential) to 90 dB (Industrial). The back-up signal on the crane at BIW is at the upper end of this range, while the residential neighborhood falls in the low end of the sound spectrum.

Noise generating activities from the proposed train use will be limited to the sound occurring as a result of the operation of the train engine and the use of the train whistle. The train's hours of operation will be limited to between 10:30 a.m. and 7:30 p.m., and the train will be utilized for a maximum of five (5) trips during that period. For each trip the train will be using the whistle for short (1 to 3 seconds) blasts when departing and arriving, as required for safety.

Based on Federal DOT information (Handbook of Urban Rail Noise and Vibration Control, Savienman and Wilson), small train engines such as the diesel and steam engines owned by MNGRR generate sound levels of 35 to 45 dB at rest, and 55 to 75 dB when operating (both measured 50 feet from the source). Whistles operate in the sound range of 60 to 90 dB, dependent upon whistle type ad purpose.

MNGRR will comply with the noise standards of the Waterfront Special Use Zone for all the areas in which the train operates. The operational sound levels, as measured within 50 feet of the train, will not exceed the 75 dB level set forth in the ordinance. The use of the whistle will be limited to only these times when the train arrives or departs (a maximum of 12 times daily), and will be for a short (under 3 seconds) duration. Longer, louder whistle use will only occur for safety or emergency purposes.

**RESPONSES TO QUESTIONS ADVANCED TO THE
PLANNING BOARD BY THE EASTERN PROM TRAIL
ADVISORY COMMITTEE ON MAY 10, 1994:
(Resubmitted)**

- 1. Some concern that the "temporary" placement of the rail line may undermine the planning process for the entire rail corridor underway with the Eastern Promenade Trail Advisory Committee.*

From the beginning of the plans for the Eastern Prom Trail planning process, the State, City and Portland Trails have been aware that the Maine Narrow Gauge RR, would be located in the corridor, and for financial reasons, had to be slightly ahead of the trail planning process for a portion of the right of way. The planning process began with locating the rail in a way that recognizes MDOT's requirements for the 26 foot rail corridor, the engineering constraints on railroad track design, and the need to maximize the room available for the trail. MNGRR has done this planning in the areas where MNGRR is contemplating temporary track.

The alternatives for the placement of the track are limited due to the engineering requirements of the train, and MNGRR has exercised choices to always make the most room for the trail. There is little artistic creativity or flexibility with the rail design as the components are functional: rails, ties, and ballast. MNGRR intends to keep the rail to the land side of the right of way to maximize the room for the trail. In the section between the Portland Company and Commercial Street, the right of way is 26 feet wide and that is where the track will have to go unless someone wishes to change the location of the right of way.

MNGRR has agreed to move the rail at the railroad's cost alone, if the planning process ultimately decides that the rail should be elsewhere on the right of way than where the tracks are proposed to be located on the current MNGRR plans. The constraints on the location are primarily engineering issues, but they also include the requirement to meet track standards imposed by the landlord and the physics of railroad design.

- 2. What is the economic necessity of the temporary installation? Would paying Passengers be carried on the rail line during the "temporary" phase of the rail line?*

The Museum depends upon revenues from the running of the railroad to operate. MNGRR is paying the City of Portland property tax on the equipment, and has a

debt service of over \$785,000. Interest rates are climbing and presently the only source of income is donations. One important revenue source is the public, who will pay to ride on the MNGRR. The viability of the museum depends on having an operation which engages the volunteers this summer, brings public attention to the operating railroad, and generates interest in the MNGRR facilities. Through this interest there will be economic viability, which is necessary to operate this facility.

There will be a period during the construction that passengers will not be allowed to ride on the train. The track must be inspected and approved by the State before the operation is certified for passengers. During the construction period, passengers will be carried on sections that have certification by the State, and after final certification, paying passengers will be carried on the lines.

- 3. Are their rigid deadlines which have been imposed by the lenders who are providing financing for the project based on the need to generate certain cash flow levels within specified periods of time?*

The community financing support was developed because of the interest in an operating Museum and railroad. The issue was not how much revenue, but how quickly, and to where the train would operate. MNGRR has a performance condition on the loan from the City and the banks. The loan is in default if the Narrow Gauge is not operating over the corridor by next spring (1995). It will take until next spring to accomplish that goal even if MNGRR starts, in June of this year, to lay track and begin excursion operations.

- 4. Is it necessary to have two tracks?*

The second track is called a passing track and is a necessary part of the operations. At the end of the line, the locomotive disconnects from the train and switches over to the passing track, passes the cars, switches back onto the main line and reconnects to what has now become the front end of the train. Without the passing track the train must back up when it changes directions. Pushing the cars from the rear is acceptable for the short term, but like backing up a truck, it is awkward and not advisable for long lengths. MNGRR will defer on the installation of the Commercial Street track until the matching passing track is built on the other end of the line. For obvious operating reasons, the passing track has to be longer than the train.

- 5. If a temporary installation is permitted, could the track begin adjacent to Parcel B approximately 1,000 feet from the intersection of Commercial Street and India*

Street and then run along in front of the Sprague Property to it's northern boundary, about 1,000 feet, thus avoiding the necessity of any temporary pedestrian crossings and minimizing the need for relocation after site plans for the entire corridor have been completed?

MNGRR feels strongly that the railroad experience needs to be long enough to justify a charge, and to attract people to come into the town or to the Museum. MNGRR also feels that it is necessary and essential to connect the Museum with the Old Port area this summer and to provide a visual, as well as physical, connection to the City.

The length of the track is set at the Portland Engineering Company by the train operations. In order for the train to get out onto the right of way, it has to pass entirely through the switch. This means that at a minimum, there needs to be a train length of track past the switch that is on the Eastern end of the Portland Company property. In consideration of the future design of the choke point by the East End beach, the MNGRR proposal only goes as far as the Cruiser Portland Monument. Revenues from the ride will be used to pay operating expenses.

6. If there is to be a temporary track with a crossing, will the crossing be at grade? Will there be gates? Lights? What will the surface be? Who will pay for it?

The track will lay on railroad ties which are located on the crushed rock ballast. The simplest crossing has gravel between the rails and a gravel ramp on both sides to bring the crossing to grade. The current layout does not anticipate any need for gates or lights. There will be signage, and the speeds will be very low at the crossings. It is MNGRR's understanding that the entity wishing to cross the rail pays to put in and maintain the crossing. To the extent that this is not an elaborate installation, MNGRR would maintain the crossing at its expense, but the crossing right and conditions are given by the MDOT. The crossings for BIW will be at grade crossings, installed by MNGRR as set forth above.

7. What barriers or fencing will, or should, be placed between the rail and trail areas in order to keep young children, dogs, etc., away from the railroad tracks?

The experience with this equipment at Edaville for the last 46 years (and 10 million visitors, one-third of which were children), is that barriers have not been necessary to keep children, dogs, cats, or baby carriages out of the path. Barriers could become a hazard, if they trap people or animals inside the right of way or obscure the operator's view of the activities on either side of the rail. Other cities have had

similar experiences, as outlined in the attached articles. Once the temporary operation is in place, observations and experimentation can take place within the State regulated guidelines for clearances from fixed objects. MNGRR feels that barriers are not only unnecessary, but unsightly, and needlessly reduce the feeling of openness on the site. The final design guidelines from the Advisory Committee will set the standards for barriers and separation.

8. *What will the speed ranges be, given the limited travel distance and public safety concerns? Will this be an agreed upon speed?*

MNGRR has chosen a 15 mile-an-hour design speed for the track. The State Rail Division or the Federal Rail Authority regulate the speeds.

9. *What fuels will be used on the railroad, and what will the railroad's hours of operation be?*

The railroad will be using Diesel fuel and Gasoline predominantly. MNGRR plans that Steam locomotives will only be used on weekends or on special occasions. The Steam locomotives burn bituminous coal. They will be using a special grade of coal to reduce potential emission impacts. Daylight and early evening hours are the proposed operating times.

10. *Is there an unequivocal understanding that if a temporary track is installed and it needs to be relocated (whether the distance is one foot or thirty feet) because of the final design of the corridor, the relocation will be done promptly and at the expense of the Maine Narrow Gauge Railroad?*

In the area between Commercial Street and Fish Point, we have offered to move the track anywhere on the rail area of the right of way at our expense, promptly, if the temporary location is found to be inappropriate. Refer to 1 above for additional response on this issue.

11. *If a temporary rail line is permitted, would it be possible for it to be a short stretch of track that would demonstrate to the City as a whole the type and level of improvement that could be expected of the railroad for a longer stretch of track?*

MNGRR is in the process of installing a 30 foot long section for Planning Board review and public inspection. MNGRR has proposed to install a length of track that was short and would serve to connect the Museum with Commercial Street as a demonstration line, if it is felt to be appropriate.

12. When the trail is installed in the future, who will bear the burden of safety at crossings or in areas of close Rail/trail proximity?

The Maine Department of Transportation has jurisdiction over any crossing of the rail corridor, and will decide the manner of crossing and the level of warning devices required before the construction of the crossing. The EPATC will also be providing input on this issue.

The means of separation in constricted areas is a matter of careful design and the final approval in the hands of the State Rail Division.

It is the responsibility of the MNGRR and its trains to operate in a safe manner at all points, but it is also an equal responsibility upon the trail users to respect the rail corridor. Cross use of the rail corridor has not proved to be a problem at Edaville.

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SHORELAND ZONING

Work within the Shoreland Zone will include the laying of the ballast, ties, and track and re-stripping of the existing paved lots. All work areas are existing, disturbed non-vegetated areas.

1. No principal or accessory buildings are proposed.
2. No piers are proposed.
3. No vegetative clearing is proposed within 75 feet of MHW. Clearing will be limited to limbing of trees and shrubs outside the 75 feet of MHW.
4. Erosion and sedimentation control: See attached Erosion and Sedimentation Control Plan.
5. The proposed development is located entirely on existing developed soils. The proposed use/impact will be far less than the previous standard gauge railroad tracks (see soils map).
6. The placement and operation of the MNGRR will not result in any direct detrimental impacts to water quality.
7. Approximately 600 feet of the MNGRR will run below the historic Fort Alan Park. An application of appropriateness was submitted for approval to the Portland Historic Preservation Committee on June 6, 1994.
8. There will be no new installation of public services.
- 9/10. The proposal exceeds the shoreline setback standards of this section of the ordinance.
11. Construction of the proposed improvements will not result in any increase in stormwater runoff entering Casco Bay.
12. Agricultural standards are not applicable to this project.
13. The general site plan features of this project conform with the standards of the municipal ordinance.

EROSION AND SEDIMENTATION CONTROL PLAN MAINE NARROW GAUGE RAIL ROAD, PORTLAND ME

The following plan for controlling sedimentation and erosion from this project is based upon sound conservation practices as those outlined in the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices, (March 1991) and Recommended Practices of the USDA Soil Conservation Service. Please refer to these sources and the Erosion Control Plan and Details included within the plan set.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

The following general erosion control practices will be used to prevent erosion and sedimentation before, during and after the construction of this project. Special care shall be used at all times in an effort to:

1. limit disturbance and hence erosion
2. correct any erosion problems immediately
3. regularly monitor the practices implemented and
4. re-vegetate disturbed areas, if any, as soon as possible

Haybales and/or Silt Fence

Haybales or silt fencing shall be installed at the existing culvert and catch basin inlets, and along the downhill perimeter of the rail road bed.

The locations requiring haybales and/or silt fence are shown on the plans. This erosion protection is not limited to only these areas and may be required elsewhere as directed by City Engineer or the Project Designer.

Inlet Protection

All culvert inlets shall be protected as noted on the plans with haybales or silt fence to prevent any erosion that may occur.

CONSTRUCTION PHASE

General

The following general practices will be used to prevent erosion during construction of this project.

- 1.. Prior to the start of construction in a specific area, silt fencing and/or haybales will be installed around culverts, at the toe of slope and in areas as located on the plans to protect against any construction related erosion.
- 2.. All disturbed areas expected to remain longer than 7 days shall be either:
 - a. Treated with mulch immediately, or
 - b. Seeded with conservation mix of annual rye grass (0.9 lbs/1000 s.f.) and mulched immediately.
3. Application of mulch shall consist of straw mulch, hydro-mulch or any suitable substitute deemed acceptable by the Project Designer.
 - a. Straw mulch shall be applied at a rate of 1 1/2 to 2 bales per unit. Straw mulch shall be secured by tacked photo degradable/biodegradable netting on grades greater than 5%.
 - b. Hydro-mulch shall consist of a mixture of either asphalt, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used between 9/15 and 4/15.
4. The following slope stabilization practices shall apply:

Slopes	Stabilization
3:1 and gentler	Seed and Mulch
2:1 - 3:1	Photo degradable/biodegradable netting or hydroseeding
2:1 or greater	Erosion Control Matting

MONITORING SCHEDULE

The contractor shall be responsible for installing, monitoring, maintaining, repairing, replacing and removing all of the erosion and sedimentation controls or appointing a qualified subcontractor to do so.

Maintenance measures will be applied as needed during the entire construction cycle. After each rainfall, a visual inspection will be made of all erosion and sedimentation controls to insure their continuing function as designed.

1. Hay bale barriers and silt fence shall be inspected and repaired once a week or immediately following any significant rainfall. Sediment trapped behind these barriers shall be excavated when it reaches a depth of 6" and redistributed to areas undergoing final grading. Should the hay bale barriers prove to be ineffective, the contractor shall replace them and reinforce them with silt fencing.

EROSION CONTROL REMOVAL

1. An area is considered stable if:
 - a. The seeded areas have 80% growth of planted seeds

2. Haybales and silt fence shall be removed once the areas upstream are stable. The haybales and silt fence shall be disposed of legally and properly off-site. All sediment trapped behind these controls shall be:
 - a. Graded in an aesthetic manner to conform to the topography, fertilized, seeded and mulched in accordance with the rates previously stated.

3. Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be regraded in an aesthetic manner to conform to the surrounding topography. Once graded these disturbed areas must be loamed (if necessary) fertilized, seeded and mulched in accordance with the rates previously stated.

CONCLUSION

The construction of the Maine Narrow Gauge Rail Road, if implemented as detailed on these plans and according to this report, should not result in any significant erosion or sedimentation either on or off site.

Respectfully submitted,



Stephen B. Mohr, ASLA
RLA #75

Susan Romatzick
Paladin Environmental
RR # 3 Box 430
Winthrop, Maine 04364

June 13, 1994

Mr. Stephen B. Mohr
Mohr & Seredin, Landscape Architects, Inc.
18 Pleasant Street
Portland, Maine 04101

Dear Steve,

I am writing as a follow-up to our conversation last Friday regarding my resume. As you can see by reading it, my specialty is really troubleshooting and providing technical assistance to wastewater treatment facilities. However, both in my course work background and as an instructor at Southern Maine Technical College, (SMTC), I do have some expertise in air pollution issues. During my undergraduate days at Rutgers University I took courses entitled "Principles of Air Pollution Control" and "Air Sampling and Analysis". In addition, I teach a course at SMTC entitled "Elements of Air Pollution Control and Solid Waste Management". In this SMTC course, I teach my students how to calculate, energy inputs, air pollutant emissions rates and how to construct and calculate conservative and non-conservative air quality models. These are the same types of calculations that are contained in my letter to the Portland Planning Board dated June 13, 1994.

In order to insure that any mistakes in either calculations or assumptions were avoided, I sought out Kathleen Molokie, an environmental engineer in the Licensing and Enforcement Division of the Maine Department of Environmental Protection's Air Bureau who reviewed my work. If you or anyone else have any other questions, or if I can be of any further assistance, please do not hesitate to contact me at my home. My telephone number there is 377-9634.

Yours truly,



Susan Romatzick
Paladin Environmental

William L. Petitjean
P.O. Box 1118
Fall City, WA 98024

June 6, 1994

Chairwoman Jadine O'Brien
Portland Planning Board
389 Congress Street
Portland, ME 04101

Dear Mrs. O'Brien:

I am writing this letter on behalf of the Maine Narrow Gauge Railroad Company and Museum (MNGRRC & M). I am an associate member of the Museum, one of the many professional volunteers working to insure the success of this Museum. My objective is to completely describe the combustion processes that will occur during the MNGRRC & M's proposed use of coal-fired steam locomotives along the Eastern Promenade. The scope of my discussion will first generally describe coal and its combustion, then focus on the specific process of coal combustion in the small historical locomotives owned by the MNGRRC & M.

COAL AND ITS COMBUSTION

Coal is a naturally occurring, carbonaceous fossil fuel that results from the geologic compression and transformation of decaying plant matter over great periods of time. In its youngest form, coal is called "lignite" and is not far removed from peat--the bogs in which all coal formation begins. Coal, in its oldest form is called "anthracite" and has been compressed to more than 90% pure carbon--the beginning stages of diamond formation.

Since coal is a compressed means of storing the solar energy captured by all plant life during photosynthesis, its combustion is a natural extension of the wildfires that have occurred in wooded sections of the country since the beginning of time.

Bituminous coal (midway between lignite and anthracite) deposits are abundant throughout the United States, and the recorded combustion of these fuels dates back to colonial times. The dawn of the steam-powered industrial age in the 19th century accelerated the use of coal greatly, and by 1928 approximately 600 million tons were mined in the United States. Approximately 25% of this production was used as railroad fuel--primarily to power steam locomotives that were contemporary with the locomotives now in the MNGRRC & M collection.

Unlike petroleum fuels, coal is not a highly refined fuel. Processing coal is usually limited to washing to remove ash and heavy impurities, double screening to remove oversized and undersized pieces from a particular grade and grading by particle size to meet the firing criteria of the furnace burning the coal. However, in many cases coal has been, and still is, burned as a run-of-mine product with no intermediate mechanical washing or sizing. This fact, coupled with the wide distribution of commercial coal deposits throughout the Eastern United States, insured that coal was the fuel of choice prior to World War II, during America's developing years. This dominance was yielded to fuel oils after mid-century, when development of oil distribution networks based at a handful of refineries provided cheap delivery of oil anywhere in America, thus replacing local coal sources that pre-dated national oil suppliers.

Because coal is produced by various geological processes and is not refined prior to use, the combustion results vary widely depending on the chemical make-up and cleanliness of a particular coal. The MNGRRC & M staff recognizes this and has made a considerable effort to develop a tight specification for locomotive coal that addresses the sensitive environmental issues raised by Portland citizens. The following description of the coal combustion process is based on a coal that meets this rigorous specification. It should be noted that many of the problems commonly associated with coal combustion are related to lower quality coals burned in a haphazard manner.

The proposed coal that meets the MNGRRC & M specification is a low sulfur, Pocahontas coal from the West Virginia coal fields. It is classed as a semi-bituminous coal and is described by the 1928 revision of Steam Power Plant Engineering:

"It has a high heating value, low moisture, ash, and sulfur content, burns freely without producing objectionable smoke and ranks among the best steaming coals in the world. The volatile matter in semi-bituminous coals is of remarkably uniform composition and approaches methane (CH₄ - the chief component of natural gas) in its analysis."

This coal can be purchased and shipped in appropriately small quantities--an important factor that helps prevent weather slacking in storage that breaks the larger lumps into fines, thus aggravating particulate emissions from hand-fired furnaces. The analysis of this coal, as fired, is:

Moisture	3.82%
Ash	5.77%
Volatile Matter	16.38%
Fixed Carbon	74.03%
Sulfur	<u>0.55%</u>
TOTAL	100.00%
BTU/16	14,207

The ultimate analysis of this coal lists the elements and their percentages corrected to a dry basis:

Ash	5.75%
Hydrogen	4.37%
Carbon	84.61%
Nitrogen	1.36%
Sulfur: inorganic	0.11%
organic	0.61%
Oxygen	<u>3.19%</u>
TOTAL	100.00%

It should be noted that all the inorganic sulfur remains in the ash after combustion; therefore, only 85% of the total sulfur actually shows up in the furnace chimney emissions.

Also, separate analysis shows a 0.07% quantity of chlorine in the coal. However, all of this element is converted to Hydrochloric acid (HCl) during combustion. Thus, chlorinated hydrocarbons are not present in stack gases produced by complete combustion. Furthermore, this 700 parts-per-million concentration of chlorine products is probably at, or below, the background levels associated with chlorinated household products, hot tubs, swimming pools and municipal water supplies.

The combustion of coal is identical to all other fossil fuels in one important aspect: All fuel combustion requires approximately 7.5 lbs. of air per 10,000 BTU's of heat released at stoichiometric conditions. This means that all fuels, regardless of type (solid, liquid or gaseous), roughly consume the same amount of air for a given heat release. More importantly, the proposed mitigation of MNGRRC & M emissions should be tempered by the probability that day-to-day variations in combustion air consumption in the Greater Portland area, far exceed the total daily air consumption of all MNGRRC & M fuel burning devices.

If the above coal is burned completely in a hand-fired furnaces, the combustible elements: carbon, hydrogen and sulfur, are oxidized at high temperatures in the presence of oxygen (air equals 23% oxygen and 77% nitrogen) to produce heat (exothermic reaction) and the following products of combustion: CO₂, carbon dioxide, H₂O, water, sulfur dioxide and sulfur trioxide, SO₂ & SO₃ free nitrogen, N₂ and ash. Hand-fired coal furnaces do not operate at high enough temperature or loads to produce the NOX group that is commonly associated with internal combustion engines. Therefore, all nitrogen in the fuel and combustion air is emitted as stable, inert N₂.

It is important to remember that matter can neither be created or destroyed--the elemental balance must be maintained throughout the combustion process. However, the particular combination of these elements into compounds in the stack gases is subject to wide variation from the above description, depending on the nature of the combustion process. The Planning Board has asked to know the chemical composition compounds that will exit

MNGRRC & M locomotive stacks and the following pages excerpts from parts 43 & 56 and Tables 11, 12 & 17 of Steam Power Plant Engineering accurately answer these questions.

STEAM POWER PLANT ENGINEERING

BY
G. F. GEBHARDT

PROFESSOR OF MECHANICAL ENGINEERING
ARMOUR INSTITUTE OF TECHNOLOGY, CHICAGO, ILL.

SIXTH EDITION, 1928 REVISION
TOTAL ISSUE, FIFTY-SEVEN THOUSAND

NEW YORK
JOHN WILEY & SONS, INC.
LONDON: CHAPMAN & HALL, LIMITED

56. **Loss Due to Visible Smoke.** — Soot is formed by the incomplete combustion of the hydrocarbon constituents of a fuel. All hydrocarbons are unstable at furnace temperatures, and unless air to insure complete combustion is mixed with them at the time they are distilled, they are quickly decomposed, the ultimate product consisting mostly of soot, H_2 and CO . Soot is formed at the surface of the fuel bed by heating the hydrocarbons in absence of air; it is not formed by the hydrocarbons striking the comparatively cool heating surface of the boiler. As a matter of fact, only a small trace of hydrocarbon gases reaches the boiler heating surface, provided there is a supply of air above the fire; hydrocarbons that do so are prevented from decomposition by the reduction in temperature due to contact. Once formed, it is difficult to burn it in the atmosphere of the furnace, because the oxygen is greatly rarefied, the gases containing only a few per cent of free oxygen.

Experience with burning soft coal shows that, if soot is once formed, a large percentage remains floating in the gases after all the other gaseous combustibles have been completely burned. Part of the soot is deposited on the tubes and throughout the boiler setting, while the rest is discharged through the stack with the gaseous products of combustion. A smoky chimney does not necessarily indicate an inefficient furnace, since the fuel loss due to visible smoke seldom exceeds 1 per cent. See Table 15. As a matter of fact, a smoky chimney may be much more economical than one that is smokeless. Thus, a furnace operating with very small air excess may cause considerable visible smoke and still give a higher evaporation than one made smokeless by a very large air excess. There will be some loss due to CO , unburned hydrocarbons, and soot in the former case, but in the latter this may be offset by the excessive loss caused by the heat carried away in the chimney gases. In general, however, smoky chimneys indicate serious losses, not because of the soot, but on account of the unburned, invisible combustible gases. (See Table 17.) The loss under this paragraph heading refers strictly to the visible combustible discharged up the stack and not that deposited on the tubes and in various parts of the setting. With natural draft the latter seldom exceeds a fraction of 1 per cent of the heat value of the fuel.

In case of very high rate of combustion under forced draft, the loss due to combustible in the cinders may range as high as 10 per cent or more. A well-designed furnace, properly operated, will burn many coals without smoke up to a certain rate of combustion. Further increase in the amount burned will result in smoke and lower efficiency due to deficient furnace capacity. Small sizes of coal ordinarily burn with less smoke than larger sizes, but develop lower capacities. In the average hand-fired furnace, washed coal burns with lower efficiency and makes more smoke than raw

(41)

coal. Most coals that do not clinker excessively can be burned with a smaller percentage of black smoke than those which clinker badly. For means of determining smoke density, see paragraph 354.

TABLE 15
QUANTITY AND HEAT VALUE OF SOLIDS IN VISIBLE SMOKE
(Bituminous Coal)
From the Report of the Chicago Association of Commerce Committee of Investigation on
Smoke Abatement. (1912)

Test Number	Smoke Density Per Cent	Solids in Visible Smoke	
		Per Cent by Weight of Fuel Fired	Per Cent of the Heat Value of the Fuel Fired
Fires with High Smoke Density			
3	21.97	0.83	0.28
17	20.00	0.75	0.36
10	20.00	1.10	0.95
30	15.80	0.65	0.49
29	14.50	0.82	0.49
Average	18.45	0.63	0.51
Fires with Low Smoke Density			
56	0	0.51	0.21
57	0	0.30	0.08
80	0	4.07	0.74
81	0	1.81	0.48
85	0	0.47	0.11
Average	0	0.47*	0.32

* Average of 10 plant tests not including Test No. 80.

TABLE 16
CHEMICAL COMPOSITION OF THE SOLID CONSTITUENTS OF SMOKE
(Chicago Association of Commerce.)

Kind of Fuel	Per Cent of Total Solids				
	Hydrocarbons (Tar)	Combustible Solids (Carbon)	Mineral Matter (Ash)	Sulphur	Total
High-pressure Plants					
Pocahontas.....	3.08	41.45	52.39	3.08	100
Bituminous.....	4.19	32.80	59.93	3.08	100
Low-pressure Plants					
Anthracite.....	0.73	31.88	67.39	0.0	100
Pocahontas.....	11.43	54.90	33.47	0.20	100
Bituminous.....	31.43	44.06	22.12	2.39	100

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43. Combustion of a Mixture of Elements. — All commercial fuels consist of a mixture of elements existing either in the free state or in combination with each other. The minimum theoretical weight of air required to completely burn any fuel is the same whether the combustible elements are free or combined; but the heat of combustion of a chemical compound may differ considerably from that based on the heat value of its constituent elements, because of the heat absorbed or given up in the creation of the compound. The character and distribution of the products of combustion depend upon the nature of the fuel, the air supply, and the conditions under which combustion took place. In practically all the furnaces, the combustion of solid fuels takes place in two stages: (1) Combustion in the fuel bed, which includes the distillation of volatile matter and partial combustion or gasification of the fixed carbon; and (2) combustion of the gaseous and other combustibles rising from the fuel bed in the combustion space. With liquid fuels, evaporation and gasification precede ignition and combustion, while with gaseous fuels ignition takes place as soon as the fuel and air mixture has reached the proper temperature for chemical union.

The various steps in the combustion of a bed of coal of uniform thickness on a stationary grate are shown in Fig. 13. At the bottom of the

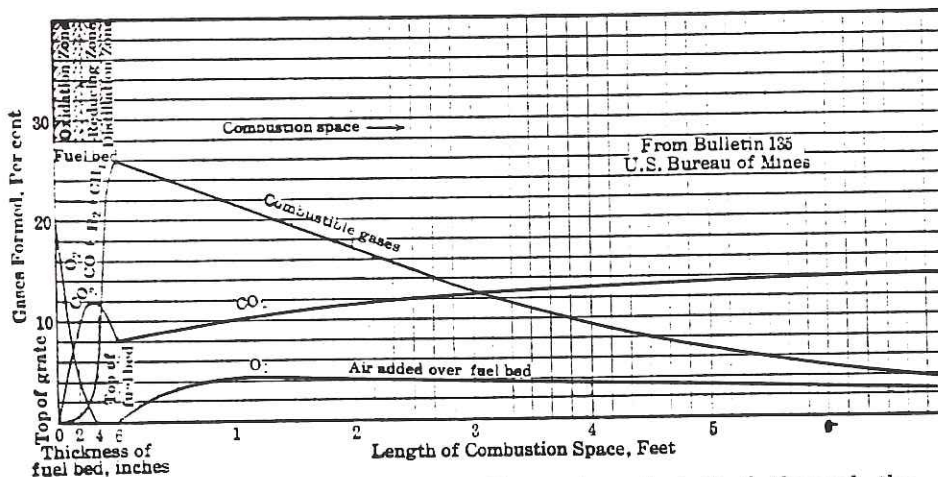


FIG. 13. Composition of Furnace Gases along their Path through the Combustion Space — Hand-fired Furnace.

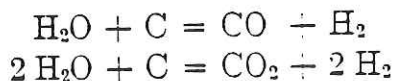
fuel bed, where the air first comes in contact with the coal, the air contains approximately 21 per cent of oxygen, and the fuel bed but little combustible. As the air passes up through the layer of fuel next the grate, the oxygen in it combines with the carbon of the coal, forming CO₂. The rate of oxidation in the lower part of the fuel bed depends almost entirely on the rate at which air flows through it. The greater the quantity of air that is forced through the fuel bed the faster the coal is oxidized.

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When the free oxygen is all used up, the resulting CO₂, on continuing its passage through the superposed unburned portion of the coal bed, is reduced to CO. The rate of reduction of CO₂ to CO depends upon the temperature of the fuel bed — the higher the temperature the faster the CO₂ is reduced to CO. At the high temperature existing in the average fuel bed, a considerable portion of the CO₂ is reduced. The layer at the top of the fuel bed consists mostly of fresh fuel which is being heated and from which the volatile matter is being distilled. With a given temperature, the distillation is independent of the air supply, since the heated volatile matter distills off whether air is supplied or not. On the other hand, fixed carbon in a fuel bed cannot be burned to CO₂ or gasified to CO unless air is supplied over the grate. The gases rising from the fuel bed contain a high percentage of combustible, and no free oxygen, irrespective of the rate at which air is forced through the fuel bed. Therefore, complete combustion cannot be obtained from the air passing through the bed unless there are holes in the fire or part of the fuel on the grate is burned out. To effect complete combustion with an even fuel bed of unburned coal, part of the air must be supplied above the fire and in such a manner that it will mix with the combustible gases. This applies to all solid fuels.

Part of the moisture in a fuel and part of that brought in with the air for combustion pass through the furnace as highly superheated steam. That part of the moisture which comes into contact with the incandescent carbon combines with the carbon to form CO, CO₂, and H₂, thus



Under average boiler-furnace conditions, the H₂ thus liberated will ultimately recombine with O₂ and form H₂O. See also paragraph 100.

Powdered, liquid and gaseous fuels are burned in suspension and are, therefore, not subject to the limitations outlined above. Almost perfect combustion can be effected with these fuels in a comparatively small space, provided the air and fuel are thoroughly mixed. Intense turbulence of the mix is essential to rapid combustion and short flames. With powdered fuel, turbulence not only accelerates contact between fuel and air, but also sweeps away the inert gas envelope surrounding the partly burned fuel particle and brings in a fresh supply of oxygen.

44. Air Theoretically Required for Perfect Combustion. — As previously stated, the minimum weight of air required to completely burn any fuel is the same whether the combustible elements are in the free state or in chemical combination with each other. If C, H, O, S, repre-

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in which the elements are designated by symbols, the relative volumes of the gaseous constituents by numerical coefficients, and the number of times the atomic weight occurs by subscripts. The symbols, relative atomic and molecular or combining weights, and the chemical reactions for the elements and compounds generally encountered in combustion work are given in Table 11.

Flame Temperatures, by Prof. W. Trinks, Power, June, 1923.
Combustion Phenomena, by E. Kieft, Combustion, Nov., 1923, p. 390.

TABLE 10
 IGNITION TEMPERATURE, DEG. FAHR.

Acetylene.....	900	Ethylene. CH	1020
* Anthracite Coal.....	1112	Hydrogen.....	1130
* Bituminous Coal.....	850	* Lignite.....	979
* Coke.....	1123	Methane CH	1200
Carbon Monoxide.....	1200	* Semi-Bit. Coal.....	980
Ethane CH	1000	Sulphur.....	470

* Glow point.

TABLE 11
 DATA RELATIVE TO ELEMENTS MOST COMMONLY MET WITH IN CONNECTION
 WITH COMBUSTION OF FUELS

Substance	Chemical Symbol	Relative Combining Weight (O ₂ = 32)		Chemical Reaction	Heating Value B.t.u. per Lb.	
		Exact	Approx.		Higher	Lower
Acetylene.....	C ₂ H ₂	26.03	26	2 C ₂ H ₂ - 5 O ₂ = 4 CO ₂ - 2 H ₂ O	21,600	21,000
Carbon to CO ₂ ...	C	12.00	12	C + O ₂ = CO ₂	14,600	14,600
Carbon to CO...	C	12.00	12	2 C + O ₂ = 2 CO	4,440	4,440
Carbon monoxide	CO	28.00	28	2 CO + O ₂ = 2 CO ₂	4,354	4,354
Ethane.....	C ₂ H ₆	30.05	30	2 C ₂ H ₆ + 7 O ₂ = 4 CO ₂ + 6 H ₂ O	22,230	20,500
Ethylene.....	C ₂ H ₄	28.03	28	C ₂ H ₄ + 3 O ₂ = 2 CO ₂ + 2 H ₂ O	21,600	20,420
Hydrogen.....	H ₂	2.016	2	2 H ₂ + O ₂ = 2 H ₂ O	62,100	52,920
Methane.....	CH ₄	16.03	16	CH ₄ + 2 O ₂ = CO ₂ + 2 H ₂ O	23,550	21,670
Sulphur to SO ₂ ...	S	32.06	32	S + O ₂ = SO ₂	4,000	4,000
Sulphur to SO ₃ ...	S	32.06	32	2 S + 3 O ₂ = 2 SO ₃	5,940	5,940

Gas	Chemical Symbol	Relative Combining Weight O ₂ = 32		Density and Volume*		Air Required for Peri. Combust.†		Heating Value per Cu. Ft.*	
		Exact	Approx.	Lb. per 100 Cu. Ft.	Cu. Ft. per Lb.	Lb. per Cu. Ft. of Gas	Cu. Ft. per Cu. Ft. of Gas	Higher	Lower
Acetylene.....	C ₂ H ₂	26.03	26	6.76	14.79	13.35	11.90	1460	1420
Carbon monoxide	CO	28.00	28	7.27	13.75	2.48	2.38	315	318
Ethane.....	C ₂ H ₆	30.05	30	7.82	12.78	16.16	16.70	1735	1600
Ethylene.....	C ₂ H ₄	28.03	28	7.30	13.70	14.85	14.30	1573	1491
Hydrogen.....	H ₂	2.016	2	0.52	192.0	34.80	2.38	325	278
Methane.....	CH ₄	16.03	16	4.16	24.00	17.32	9.52	992	902
Air.....	†	28.95	29	7.52	13.30				
Carbon dioxide...	CO ₂	44.00	44	11.43	8.75				
Nitrogen.....	N ₂	28.02	28	7.28	13.74				
Oxygen.....	O ₂	32.00	32	8.31	12.03				
Sulphur dioxide..	SO ₂	64.07	64	16.65	6.00				

* 68 deg. Fahr. and atmospheric pressure.

† See paragraph 44.

‡ Equivalent to O₂ + 3.82 N₂.

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coal. Most coals that do not clinker excessively can be burned with a smaller percentage of black smoke than those which clinker badly. For means of determining smoke density, see paragraph 354.

TABLE 15

QUANTITY AND HEAT VALUE OF SOLIDS IN VISIBLE SMOKE
(Bituminous Coal)

From the Report of the Chicago Association of Commerce Committee of Investigation on Smoke Abatement. (1912)

Test Number	Smoke Density Per Cent	Solids in Visible Smoke	
		Per Cent by Weight of Fuel Fired	Per Cent of the Heat Value of the Fuel Fired
Fires with High Smoke Density			
3	21.97	0.83	0.28
17	20.00	0.75	0.36
10	20.00	0.70	0.95
30	15.80	0.70	0.49
29	16.00	0.82	0.49
Average	18.45	0.63	0.51
Fires with Low Smoke Density			
5	0	0.51	0.21
57	0	0.30	0.08
80	0	4.07	0.41
81	0	1.81	0.21
85	0	0.47	0.11
Average	0	0.47*	0.32

Table 16

TABLE 16

CHEMICAL COMPOSITION OF THE SOLID CONSTITUENTS OF SMOKE
(Chicago Association of Commerce.)

Kind of Fuel	Per Cent of Total Solids				
	Hydrocarbons (Tar)	Combustible Solids (Carbon)	Mineral Matter (Ash)	Sulphur	Total
High-pressure Plants					
Pocahontas.....	3.08	41.45	52.39	3.08	100
Bituminous.....	4.19	32.50	59.93	3.08	100
Low-pressure Plants					
Anthracite.....	0.73	31.88	67.39	0.0	100
Pocahontas.....	11.43	54.90	33.47	0.20	100
Bituminous.....	31.43	44.06	22.12	2.39	100

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Boiler	ANALY		
	CO ₂	O ₂	C
No. 1, hand-fired.....	11.00	6.90	0.1
No. 1, with smoke-prevention device.....	10.65	6.45	2.1
No. 2, hand-fired.....	10.25	8.60	1.1
No. 3, hand-fired.....	13.25	3.50	1.1
No. 4, fire under caustic pot, hand-fired.....	10.95	1.30	3.0
No. 5, split bridge, hand-fired.....	8.75	7.00	3.1
No. 6, with smoke-prevention device.....			
No. 7, with smoke-prevention device.....			
No. 8, with smoke-prevention device.....			

57. Radiation and Unaccounted for. — The loss of heat by radiation and unaccounted for is determined by difference. That is, the heat input minus the heat output as represented in the steam and the smoke. The "unconsumed hydrogen and carbon for." Unless accurate observations are made of various factors entering into the calculation, the "radiation and unaccounted for" loss may represent a value of the coal. Careful tests of the radiation loss seldom exceed 1 per cent of the heat input. In stalled settings or when the draft is not maintained, the loss may be considerably more than 1 per cent. In carefully conducted tests of "radiation and unaccounted for" the loss is an average of about 4 per cent throughout the setting, and the loss is reduced as draft pressures may greatly means are available for determining the loss.

58. Heat Balance. — Any heat loss item constitutes a heat loss. In the various divisions the more readily is the loss determined in everyday furnace practice a

¹ Heat Losses from Boiler Furnace

Table 17

TABLE 17

ANALYSIS OF CHIMNEY GASES

Boiler	Smoky						Clear					
	CO ₂	O ₂	CO	CH ₄	H ₂	N ₂	CO ₂	O ₂	CO	CH ₄	H ₂	N ₂
No. 1, hand-fired.....	11.00	6.90	0.90			81.20						
	10.65	6.45	2.15			80.75						
No. 1, with smoke-prevention device.....							7.00	13.50	0			79.50
No. 2, hand-fired.....	10.25	8.60	.50	0	0	80.65	9.00	9.75	0			81.25
No. 3, hand-fired.....	13.25	3.50	.05	0.25	0	82.95						
No. 4, fire under caustic pot, hand-fired.....	10.95	1.30	3.00	.70	3.23	80.82						
No. 5, split bridge, hand-fired.....	8.75	7.00	3.25	.40	1.00	79.60						
No. 6, with smoke-prevention device.....							7.25	12.00	0	0	0	80.75
No. 7, with smoke-prevention device.....							7.15	12.15	0	0	0	80.70
No. 8, with smoke-prevention device.....							8.15	11.10	0	0	0	80.75

57. Radiation and Unaccounted For. — These losses are usually determined by difference. That is, the difference between the heat represented in the steam and the sum of the losses just mentioned is charged to "unconsumed hydrogen and hydrocarbons, to radiation, and unaccounted for." Unless accurate observations have been made in determining the various factors entering into the heat balance, the "radiation and unaccounted for" loss may represent a large percentage of the total heating value of the coal. Careful tests on well-designed boiler furnaces show that the radiation loss seldom exceeds 2 per cent.¹ In case of very poorly installed settings or when the rate of firing is very low, the radiation loss may be considerably more than this. An examination of the data from carefully conducted tests of modern boiler furnaces will show that the "radiation and unaccounted for" items range from 2 to 6 per cent with an average of about 4 per cent. Soot deposited on the boiler tubes and throughout the setting, and clinders blown out of the stack under high draft pressures may greatly increase the unaccounted for loss, unless means are available for determining these factors.

58. Heat Balance. — Any chart giving the distribution of the various heat items constitutes a heat balance. The greater the number of subdivisions the more readily is it possible to locate the source of loss. In everyday furnace practice a determination of the heat balance is seldom

¹ Heat Losses from Boiler Furnace Walls: Power Plant Engrg., Sept. 15, 1925, p. 941.

ENGINEERING

cessively can be burned with a those which clinker badly. For paragraph 354.

SOLIDS IN VISIBLE SMOKE (coal)

Commerce Committee of Investigation on (1912)

Solids in Visible Smoke	
Per Cent by Weight of Fuel Fired	Per Cent of the Heat Value of the Fuel Fired
0.83	0.28
0.75	0.36
1.10	0.95
0.65	0.49
0.82	0.49
0.63	0.51

Density	
0.51	0.21
0.30	0.08
4.07	0.74
1.81	0.48
0.47	0.11
0.47*	0.32

including Test No. 30.

16

SOLID CONSTITUENTS OF SMOKE (of Commerce)

Plants	Solids		
	Mineral Matter (Ash)	Sulphur	Total
Plants	52.39	3.08	100
	59.93	3.08	100
Plants	67.39	0.0	100
	33.47	0.20	100
	22.12	2.39	100

The previous excerpts from this venerable, contemporary textbook illustrate two important points: The first point shows that coal can be burned as cleanly as other commercial fuels if it is properly injected into the boiler and the combustion air is fed under, and over the firebed in the current proportions; the second point rests on the fact that this old text (1928) directly addresses the fuel questions posed by the Portland Planning Board today. Thus, we all can see that much time and money was committed long ago to understanding the coal combustion process and the issues surrounding smoke and emissions in urban areas. This is not a new and novel controversy, it is merely an extension of old arguments that are being re-visited.

In conclusion, the foregoing general description of coal combustion shows that careful specification of the best semi-bituminous coal and equally careful attention to its combustion, can produce a coal furnace operation that has the following emission features:

- far lower unburned hydrocarbon concentrations than I.C. engines and airplane engines can achieve without catalytic converters
- far lower soot emissions than visibly apparent from unregulated diesel engines
- none of the NOX emissions commonly associated with all I.C. engines and airplane engines
- sulfur compound emissions below the allowable standards for furnace oil burners and diesel engines

The key element in this conclusion is "care" and "vigilance" because a coal fire is analogous to the ubiquitous, backyard barbecue. If the clean-burning, well-ventilated charcoal fire is loaded with drippings from the cooking meat, then the lid is put on the kettle to restrict combustion air, the result will be the well known column of toxic, unburned hydrocarbons that inform the neighbors that the outdoor cooking season has arrived. If the MNGRRC & M locomotives are fired with bright, well-ventilated fires, their emissions will be much less significant than the barbecues and gasoline lawnmowers of those citizens who would oppose the Narrow Gauge railway's rightful place as a Portland institution.

COAL COMBUSTION IN NARROW GAUGE STEAM LOCOMOTIVES

The combustion of coal in steam locomotives is a special case because they are mobile steam power plants that are severely restricted by limited height, width and weight constraints. These limitations adversely affect locomotive boiler proportions and forced locomotive designers to accept small grate areas and furnace volumes. However, the high demand for steam by the cylinders pulling heavy loads contradicted the boiler limits and

most steam locomotives required firing rates that far exceeded accepted stationary practice in order to keep adequate steam pressure. The result of these excessive firing rates was significant particulate emissions and carbon loss up the stack. But these emissions only occurred during heavy pulls (uphill) and at high speeds.

Despite this contradictory description, vast improvements in steam locomotive combustion practices were made between 1900 and 1950, and although locomotive practice never approached the relative efficiencies common in stationary, coal burning boilers, many large railroads combined these improvements with aggressive smoke abatement programs to reduce nuisance smoke in urban areas. However, the variations in coal quality and the imperfect response of human firemen made the complete elimination of smoke impossible; therefore, all coal fired steam locomotives will smoke on occasion.

The MNGRRC & M locomotives are small, narrow gauge industrial locomotives. The heaviest engine weighs 35 tons, compared to 600 tons for the heaviest main line steam locomotives. These little engines represent locomotive coal combustion technology that was common over a 50-year period, from 1875 to 1925, when hand fired boilers dominated the railroad industry. They do not represent "state-of-art" because the limited financial resources of their previous owners, the rural character of their service territories and low overall fuel consumption did not encourage improvements that appeared on newer, larger engines.

The proposed operation of these engines in the Portland area will be characterized by light loads, low speeds and low mileage's, when compared with operations at the Edaville Railroad in Massachusetts and the Edaville precedents in Maine. Present planning estimates a maximum of 4 round trips with the steam train per day; each round trip equals 2.8 miles. The total mileage per day will equal 14 miles. The traditional fuel consumption estimates for these two foot gauge locomotives is 40 lbs. per mile, including fire starting and standby. This translates into 448 lbs. of coal consumed per day by the MNGRRC & M.

It must be noted here that this consumption is an estimate and should be confirmed by records of actual operations after start up.

Four diesel trucks, operating about 46 miles each per day will consume an equivalent amount of fuel. Furthermore, all the ash, sulfur and other impurities found in diesel fuel, plus soot, will be ejected in the exhaust stream of these trucks as easily aspirated sub-micron particles. The ash fraction from the coal burning steam locomotives will be largely captured as solid waste in the ash pan, and will be properly disposed. Ash ejected from the stack will be macroscopic sizes that cannot be aspirated because the hand firing of lump coal does not produce sub micron size particles. Fuel oil is atomized into fine mist that creates the finely divided ash particles that remain airborne indefinitely. The MNGRRC & M locomotives will be operating at a fraction of their capacity (10-12 car

trains on the Edaville vs. 2-3 car trains on the MNGRRC & M). Therefore, the popular image of visible smoke consisting of particulate and carbon will be minimal because firing rates will be very low.

An important characteristic of the present furnace configuration on MNGRRC & M locomotives is the inability to introduce combustion air over the firebed. A review of the earlier excerpts from Steam Power Plant Engineering will confirm that this arrangement tends to produce unburned hydrocarbons and soot. Very careful "cross" firing by well-trained crews can reduce episodes of visible smoke and unburned hydrocarbons significantly.

If careful firing and good crew training proves inadequate, then a search of technology improvements on steam locomotives built after 1925 can yield information that may be adapted to these smaller locomotives. However, significant modifications to the boilers of these locomotives will alter their configurations, thus detracting from their artifact value. Nonetheless, modifications based on a technology search and engineered adaptations can yield some reduction in smoke emissions.

Since locomotives like the MNGRRC & M machines were never fitted with such a system, the MNGRRC & M must operate their locomotives as they are presently configured to establish base line criteria. Once this baseline is established, then an improvement program can be started, if necessary.

The overall success of hand fired furnace operations is a function of crew training. Because the engineer and fireman control all locomotive functions manually, they must be thoroughly trained. As the crews develop proficiency with the principle based skills once common throughout steam-powered America, then the MNGRRC & M will have gone a long way toward achieving consistent, complete combustion in their locomotives.

CONCLUSIONS

Overall conclusions based on the above material suggest the following:


1. The best low ash, low volatile, free burning steam coal should be purchased on a tight specification. Since coal quality varies greatly, the supplier must certify compliance with the specification.
2. The analyses and excerpts from Steam Power Plant Engineering show that it is possible to completely burn the above coal with less adverse impact on Portland air quality than other commercial fuels now being burned in the unregulated sector.
3. The MNGRRC & M locomotives are historic artifacts not presently in a "state-of-art" configuration. If in the course of operation "smoke" becomes an intolerable problem,

an organized development program and a reasonable time frame can reduce visible emissions to a more acceptable level.

4. Since all the MNGRRC & M steam locomotives are manually controlled, engine crews must receive training so they possess the skills and attitudes required to implement the above criteria and produce consistent, complete combustion.

I trust the above information is satisfactory. If the Board has any questions, please do not hesitate to contact me. I can be reached at Gilbert Manufacturing Corp. through June 24th. Their number is (207) 875-2301. After June 24th, I can be reached at (206) 222-7178 or (206) 222-6781.

Sincerely,



William L. Petitjean

WLP/sd

Attachment: resumé

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Susan Romatzick
Paladin Environmental
RR # 3 Box 430
Winthrop, Maine 04364

June 13, 1994

Mrs. Jadine O'Brien, Chairperson
Portland Planning Board
389 Congress Street
Portland, Maine 04101

Dear Mrs. O'Brien:

I am writing at the request of Phineas Sprague with regard to air quality and air pollution issues surrounding the proposal by the Maine Narrow Gauge Railroad Co. and Museum to run a train between the India Street/Commercial Street intersection and Fish Point. My discussion of these issues will be broken down into two basic areas. First, I will be comparing the Maine Narrow Gauge Railroad Proposal to the Maine Department of Environmental Protection's, (DEP), Air Emissions Licensing Criteria. Secondly, I have developed two conservative air quality models and calculated the expected ambient air quality conditions that would occur under these two scenarios and compared these results with Maine's Ambient Air Quality Standards.

Over the past few weeks, I have had several discussions with staff from the DEP, in particular, Sandra Tate, Director, Portland Regional Office, Cathy Richardson, Environmental Specialist III, in the Air Bureau's Field Services Division and Kathleen Molokie, an Environmental Engineer in the Air Bureau's Licensing and Enforcement Division. In the generation of the numbers that follow in this letter, I have attempted to be as conservative as possible. For example, coal usage is based upon running the train in a mountainous area rather than in an area consisting of gentle slopes. The fuel usage for the diesel engines is based upon 125 horsepower engine running at full speed rather than the 100 horsepower engine pulling a train at a speed of 15 miles per hour. Based upon these fuel usage assumptions and my conversations with the DEP staff mentioned above, I offer the following information to the Portland Planning Board.

Potential air pollution sources are broken down into two basic categories. They are stationary sources and mobile sources. Mobile sources such as the Maine Narrow Gauge Railroad are exempt and thus not required to obtain an air emissions license from the DEP, (Chapter 115, II.C.4). For stationary sources, there are currently three basic standards against which the stationary source is compared to determine whether or not an air emission license is required.

The first standard is based upon total heat input available on-site. An air emission license is required if the total heat input of fuel-burning equipment is greater than or equal to 10

million British Thermal Units, (Btu), per hour, (Chapter 115, II.C.1). By comparison, the total heat input available if both diesel engines plus the coal fired engine were on-line at the same time would only be 2.63 million Btus per hour, (see Appendix I for calculations).

The second standard is for general process sources or equipment. An air emission license is required if under normal operation either 10 or more pounds per hour or 100 or more pounds per day of any regulated air pollutant is emitted, (Chapter 115, II.C.3). Contained in Table 1 below is a comparison of these standards with the emissions from both the coal engine and the diesel engine that will be used by the Maine Narrow Gauge Railroad. As one can see, none of the emissions for these air pollutants comes close to meeting the minimum standard that would require licensing by the DEP's Air Bureau if it were a stationary general process source. The emission rates are based on the use of 150 lbs of coal per hour and a maximum of 1200 pounds per day. For the 100 horsepower diesel engines, the emission rates are based upon a fuel usage of 1.5 gallons per hour and a maximum of 12 gallons per day. The actual emission rates for the sulfur dioxide, nitrogen dioxide and total suspended particulates from these engines were taken from Environmental Protection Agency Technical Data Tables generated for use by Air Quality Licensers in the estimation of air pollutant emissions. (Please see Appendix I for specific calculations.)

Table 1

Comparison of Coal and Diesel Engine Emissions by Maine Narrow Gauge Railroad to Maine DEP General Process Stationary Source Limits

	Sulfur Dioxide	Nitrogen Dioxide	Total Suspended Particulates
Maine Significant Air Pollutant Emission Rate	10 lb/h	10 lb/h	10 lb/h
	100 lb/d	100 lb/d	100 lb/d
Monson # 3 Coal Engine	1.5 lb/h	0.23 lb/h	1.13 lb/h
	12 lbs/d	1.8 lb/d	9.0 lb/d
100 Hp Diesel Engine	0.06 lb/h	0.9 lb/h	0.06 lb/h
	0.48 lb/d	7.3 lb/d	0.51 lb/d

The third basic standard utilized by the DEP to determine whether or not a stationary source is required to obtain an air emission license is based upon specific annual air pollutant emission rates. An air emission license is required if under

normal operation, the rate of emissions equals or exceeds any of the emission rates listed in Chapter 100, definition number 88. Contained in Table 2 below is a comparison of these standards with the emissions from both the coal engine and the diesel engine that will be used by the Maine Narrow Gauge Railroad. To calculate the numbers contained in Table 2, the information contained in Table 1 was utilized along with the estimation that the Maine Narrow Gauge Railroad will run a maximum of 300 days per year. It is expected that the coal engine will be used a maximum of 100 days per year and the diesel engines will be run the remaining 200 days per year. Once again, none of the emissions for these air pollutants comes close on an annual basis to meeting the minimum standard that would require licensing by the DEP's Air Bureau if it were a stationary source. (Appendix I contains specific calculations for Table 2.)

Table 2

**Comparison of Annual Coal and Diesel Engine Emissions by Maine
Narrow Gauge Railroad to Maine DEP General Process Stationary
Source Limits**

	Sulfur Dioxide (tons/yr)	Nitrogen Dioxide (tons/yr)	Total Suspended Particulates (tons/yr)
Maine Significant Air Pollutant Emission Rate	40	40	25
Monson # 3 Coal Engine			
run 100 days/year	0.6	0.09	0.45
run 300 days/year	1.8	0.27	1.35
100 Hp Diesel Engine			
run 200 days/year	0.05	0.73	0.05
run 300 days/year	0.07	1.10	0.077

With regard to the air quality modeling, these will be used to demonstrate what effect, if any, the running of the train with either the coal-fired or diesel-fired engine will have on inhabitants in the area. The two models are conservative. In other words, there is an assumption that no decay or accumulation of the particular air pollutants studied will occur. Emission rates for the various air pollutants are taken from information utilized to generate the data contained in Tables 1 and 2. In addition, the calculations and assumptions used in these two models were reviewed by Kathleen Molokie, a DEP Air Bureau Environmental Engineer before being submitted to the Portland

Planning Board.

In Air Quality Model Number 1, the width utilized is 1.5 miles, (the length of the railroad track), and the height of air that the pollutant is mixed with is 100 feet. In other words, an inversion that would prevent additional mixing with the larger air mass above a height of 100 feet is assumed. The wind speed is assumed to be blowing on-shore at 5 miles per hour. Because ambient air quality standards are all metric, the numbers used in the calculations are first converted from English to metric and then utilized in the model. Please see Appendix II for the actual calculations.

Table 3 contains a comparison of the Maine Primary Ambient Air Quality Standards to the projected ambient concentrations calculated for Air Quality Model # 1. Primary Ambient Air Quality Standards are intended to protect the weakest and most vulnerable individuals because everyone has to be able to breathe the air. Unlike water, people cannot go out and buy higher quality air to breathe. As one readily see based upon this model, none of the emissions for these air pollutants comes close to even equaling the Annual Primary Air Quality Standards let alone exceeding these standards. Although the likelihood of an inversion only 100 feet high occurring in this area is remote at best, this model was used to give the Portland Planning Board something that they could use to compare to existing Ambient Air Quality Standards.

Table 3

Comparison of the Effect of Coal and Diesel Engine Emissions by
Maine Narrow Gauge Railroad to Maine DEP Ambient Air Quality
Standards Using Air Quality Model # 1

	Sulfur Dioxide (ug/m ³)	Nitrogen Dioxide (ug/m ³)	Total Suspended Particulates (ug/m ³)
Maine Air Quality Limits			
Annual	57	100	60
24-Hour	230		150
3-Hour	1150		
Monson # 3 Coal Engine	1.15	0.17	0.86
100 Hp Diesel Engine	0.046	0.7	0.05

In Air Quality Model Number 2, the width utilized remains at 1.5 miles but the height of air that the pollutant is mixed with is changed to only 10 feet. In other words, an inversion that would prevent additional mixing with the larger air mass that exists above a height of 10 feet is assumed. The wind speed used in this model is still assumed to be blowing on-shore at 5 miles per hour. Once again, Appendix II contains the conversions and actual calculations for this model.

A comparison of the Maine Primary Ambient Air Quality Standards to the projected ambient concentrations calculated for Air Quality Model # 2 is contained in Table 4 below. Once again, none of the emissions for these air pollutants comes close to even equaling the Annual Primary Air Quality Standards let alone exceeding these standards. Although an inversion 10 feet off of the ground would never occur in this area, based upon conversations that I had with DEP Air Bureau personnel, this model to demonstrate the worst possible scenario for someone walking next to the train while it was in operation.

Table 4

Comparison of the Effect of Coal and Diesel Engine Emissions by
Maine Narrow Gauge Railroad to Maine DEP Ambient Air Quality
Standards Using Air Quality Model # 2

	Sulfur Dioxide (ug/m ³)	Nitrogen Dioxide (ug/m ³)	Total Suspended Particulates (ug/m ³)
Maine Air Quality Limits			
Annual	57	100	60
24-Hour	230		150
3-Hour	1150		
Monson # 3 Coal Engine	11.5	1.7	8.6
100 Hp Diesel Engine	0.46	7.0	0.50

This concludes my comments regarding the Maine Narrow Gauge Railroad Co. and Museum application. If you or anyone on the Portland Planning Board have any questions about anything stated in this letter or if I can provide any other information, please do not hesitate to contact me at my home, 377-9634. Thank you.

Sincerely yours,

A handwritten signature in cursive script that reads "Susan Romatzick".

Susan Romatzick
Paladin Environmental

APPENDIX I

A. TOTAL HEAT INPUT AVAILABLE (Btu's/hr)

MONSON # 3 COAL-FIRED ENGINE

$$\frac{150 \text{ lbs coal}}{\text{hr}} * \frac{14,771 \text{ Btu}}{\text{lb coal}} = 2,215,650 \text{ Btu/hour}$$

100 Hp DIESEL ENGINE

$$\frac{1.5 \text{ gal}}{\text{hr}} * \frac{138,000 \text{ Btu}}{\text{gal}} = 207,000 \text{ Btu/hour}$$

$$1 \text{ COAL ENGINE} = 2,215,650 \text{ Btu/hour}$$

$$+ 2 \text{ DIESEL ENGINES} = 414,000 \text{ Btu/hour}$$

$$\underline{\text{TOTAL HEAT INPUT AVAILABLE} = 2,629,650 \text{ Btu/hour}}$$

B. AIR POLLUTANT EMISSION RATES (TABLE 1)

1. MONSON # 3 COAL-FIRED ENGINE

a) SULFUR DIOXIDE, (SO₂), BASED ON 0.5% SULFUR CONTENT

$$\frac{150 \text{ lb coal}}{\text{hr}} * \frac{8 \text{ hr}}{\text{day}} * \frac{0.005 \text{ lbs S}}{\text{lb coal}} * \frac{2 \text{ lbs SO}_2}{1 \text{ lb S}} = \frac{12 \text{ lbs SO}_2}{\text{DAY}}$$

MOLECULAR WT OF SO₂ = 64 g/MOLE

MOLECULAR WT OF S = 32 g/MOLE

THEREFORE A 2:1 WT. TO WT. RATIO EXISTS.

b) NITROGEN DIOXIDE, (NO₂) BASED ON EMISSION RATEOF 3 lbs NO₂/TON COAL BURNED

$$\frac{150 \text{ lbs coal}}{\text{hr}} * \frac{8 \text{ hrs}}{\text{DAY}} * \frac{3 \text{ lbs NO}_2}{2000 \text{ lbs coal}} = \frac{1.80 \text{ lbs NO}_2}{\text{DAY}}$$

APPENDIX I (CONT.)

B.1.c) TOTAL SUSPENDED PARTICULATES BASED ON EMISSION RATE
OF 15 LBS/TON COAL BURNED.

$$\frac{150 \text{ lbs coal}}{\text{hr}} * \frac{8 \text{ hrs}}{\text{DAY}} * \frac{15 \text{ lbs Particulates}}{2000 \text{ lbs coal}} = \frac{9 \text{ lbs Particulates}}{\text{DAY}}$$

2. 100 Hp DIESEL ENGINE

a) Sulfur Dioxide BASED ON 0.29 LBS SO₂/MILLION BTU

$$\frac{1.5 \text{ gal}}{\text{hr}} * \frac{8 \text{ hr}}{\text{Day}} * \frac{138,000 \text{ BTU}}{\text{gal}} * \frac{0.29 \text{ lbs SO}_2}{1,000,000 \text{ BTU}} = \frac{0.48 \text{ lbs SO}_2}{\text{DAY}}$$

b) NITROGEN DIOXIDE BASED ON 4.41 LBS NO₂/MILLION BTU

$$\frac{1.5 \text{ gal}}{\text{hr}} * \frac{8 \text{ hr}}{\text{DAY}} * \frac{138,000 \text{ BTU}}{\text{gal}} * \frac{4.41 \text{ lbs NO}_2}{1,000,000 \text{ BTU}} = \frac{7.3 \text{ lbs NO}_2}{\text{DAY}}$$

c) TOTAL SUSPENDED PARTICULATES BASED ON 0.31 LBS/MILLION BTU

$$\frac{1.5 \text{ gal}}{\text{hr}} * \frac{8 \text{ hr}}{\text{Day}} * \frac{138,000 \text{ BTU}}{\text{gal}} * \frac{0.31 \text{ lbs Particulates}}{1,000,000 \text{ BTU}} = \frac{0.51 \text{ lbs Particulates}}{\text{DAY}}$$

C. AIR POLLUTANT EMISSION RATES (TABLE 2)

1) MONSON # 3 COAL-FIRED ENGINE

a) ANNUAL SO₂ EMISSIONS

$$\frac{12 \text{ lbs}}{\text{DAY}} * \frac{100 \text{ days}}{\text{yr}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = 0.6 \text{ TONS/year}$$

$$\frac{12 \text{ lbs}}{\text{Day}} * \frac{300 \text{ days}}{\text{YR}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{1.8 \text{ TONS}}{\text{year}}$$

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



APPENDIX I (cont.)

C.1.b. ANNUAL NO₂ EMISSIONS

$$\frac{1.8 \text{ lbs NO}_2}{\text{DAY}} * \frac{100 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.09 \text{ TONS NO}_2}{\text{Year}}$$

$$\frac{1.8 \text{ lbs NO}_2}{\text{DAY}} * \frac{300 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.27 \text{ TONS NO}_2}{\text{year}}$$

c) ANNUAL TOTAL SUSPENDED PARTICULATE EMISSIONS

$$\frac{9 \text{ lbs Particulate}}{\text{Day}} * \frac{100 \text{ days}}{\text{yr}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.45 \text{ TONS Particulate}}{\text{year}}$$

2. 100 HP DIESEL ENGINE

a) ANNUAL SO₂ EMISSIONS

$$\frac{0.48 \text{ lbs SO}_2}{\text{DAY}} * \frac{200 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.05 \text{ TONS SO}_2}{\text{year}}$$

$$\frac{0.48 \text{ lbs SO}_2}{\text{DAY}} * \frac{300 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.072 \text{ TONS SO}_2}{\text{year}}$$

b) ANNUAL NO₂ EMISSIONS

$$\frac{7.3 \text{ lbs NO}_2}{\text{DAY}} * \frac{200 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.73 \text{ TONS NO}_2}{\text{year}}$$

$$\frac{7.3 \text{ lbs NO}_2}{\text{DAY}} * \frac{300 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{1.10 \text{ TONS NO}_2}{\text{year}}$$

c) ANNUAL TOTAL SUSPENDED PARTICULATES

$$\frac{0.51 \text{ lbs Particulate}}{\text{DAY}} * \frac{200 \text{ DAYS}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.05 \text{ TONS Part.}}{\text{year}}$$

$$\frac{0.51 \text{ lbs Particulate}}{\text{DAY}} * \frac{300 \text{ days}}{\text{year}} * \frac{1 \text{ TON}}{2000 \text{ lbs}} = \frac{0.077 \text{ TONS Part}}{\text{year}}$$

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



Susan Romatzick SR
Paladin Environmental

APPENDIX II (CONT.)

A.2) 100 Hp DIESEL ENGINE

a) SO₂ (ug/m³)

$$\text{LOADING RATE} = \frac{0.06 \text{ lbs}}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{\text{g}} = \frac{7.56 \text{ mg}}{\text{sec}}$$

$$\text{AIR FLOW RATE} = 164,448 \text{ m}^3/\text{sec}$$

$$\text{CONC} = \frac{7.56 \text{ mg/sec}}{164,448 \text{ m}^3/\text{sec}} = 0.00005 \text{ mg/m}^3 = 0.046 \text{ ug/m}^3$$

b) NO₂ (ug/m³)

$$\text{LOADING RATE} = \frac{0.91 \text{ lbs}}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{\text{g}} = \frac{115 \text{ mg}}{\text{sec}}$$

$$\text{AIR FLOW RATE} = 164,448 \text{ m}^3/\text{sec}$$

$$\text{CONC.} = \frac{115 \text{ mg/sec}}{164,448 \text{ m}^3/\text{sec}} = 0.0007 \text{ mg/m}^3 = 0.7 \text{ ug/m}^3$$

c) TOTAL SUSPENDED PARTICULATES (ug/m³)

$$\text{LOADING RATE} = \frac{0.064 \text{ lbs}}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{\text{g}} = \frac{8.06 \text{ mg}}{\text{sec}}$$

$$\text{AIR FLOW RATE} = 164,448 \text{ m}^3/\text{sec}$$

$$\text{CONC.} = \frac{8.06 \text{ mg/sec}}{164,448 \text{ m}^3/\text{sec}} = 0.00005 \text{ mg/m}^3 = 0.05 \text{ ug/m}^3$$

B. AIR QUALITY MODEL # 2

$$\text{MODEL WIDTH} = 1.5 \text{ MILES} = 2,414 \text{ m.}$$

$$\text{MODEL HEIGHT} = 10 \text{ Feet} = 3.048 \text{ m}$$

$$\text{WIND SPEED} = 5 \text{ miles/hr} = 2.235 \text{ m/sec}$$

$$\text{AIR FLOW RATE} = 2,414 \text{ m} * 3,048 \text{ m} * 2.235 \text{ m/sec} = 16,445 \text{ m}^3/\text{sec}$$

APPENDIX II (CONT.) (AIR MODEL 2)

B.1 MONSON #3 COAL-FIRED ENGINE

a) SO₂ (ug/m³)

LOADING RATE - SAME AS MODEL 1 = 189 mg/sec

AIR FLOW RATE = 16,445 m³/sec

$$\text{CONC.} = \frac{189 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.0115 \frac{\text{mg}}{\text{m}^3} = 11.5 \frac{\mu\text{g}}{\text{m}^3}$$

b) NO₂ (ug/m³)

LOADING RATE = SAME AS MODEL 1 = 28.34 mg/sec

AIR FLOW RATE = 16,445 m³/sec

$$\text{CONC.} = \frac{28.34 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.0017 \text{ mg/m}^3 = 1.7 \mu\text{g/m}^3$$

c) TOTAL SUSPENDED PARTICULATES (ug/m³)

LOADING RATE = SAME AS MODEL #1 = 141.7 mg/sec

AIR FLOW RATE = 16,445 m³/sec

$$\text{CONC} = \frac{141.7 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.0086 \text{ mg/m}^3 = 8.6 \mu\text{g/m}^3$$

2) 100 Hp DIESEL ENGINE

a) SO₂ (ug/m³)

LOADING RATE = SAME AS MODEL #1 = 7.56 mg/sec

AIR FLOW RATE = 16,445 m³/sec

$$\text{CONC} = \frac{7.56 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.00046 \frac{\text{mg}}{\text{m}^3} = 0.46 \frac{\mu\text{g}}{\text{m}^3}$$



APPENDIX II

A. AIR QUALITY MODEL #1

$$\text{MODEL WIDTH } 1.5 \text{ MILES} \quad \frac{1.5 \text{ MILES}}{1} * \frac{1609.3 \text{ meter}}{1 \text{ MILE}} = 2,414 \text{ m.}$$

$$\text{MODEL HEIGHT } 100 \text{ Ft} \quad \frac{100 \text{ Ft}}{1} * \frac{0.3048 \text{ meter}}{1 \text{ foot}} = 30.48 \text{ m.}$$

$$\text{WIND SPEED } 5 \text{ miles/hour} \quad \frac{5 \text{ miles}}{\text{hour}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1609.3 \text{ m}}{1 \text{ mile}} = 2.235 \frac{\text{m}}{\text{sec}}$$

1) MONSON #3 COAL FIRED ENGINE

a) SO_2 ($\mu\text{g}/\text{m}^3$)

$$\text{Loading RATE} = \frac{1.5 \text{ lbs } \text{SO}_2}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{1 \text{ g}} = \frac{189 \text{ mg}}{\text{sec}}$$

$$\text{AIR FLOW RATE} = \text{Area} * \text{velocity} = 2,414 \text{ m} * 30.48 \text{ m} * \frac{2.235 \text{ m}}{\text{sec}} = \frac{164,448 \text{ m}^3}{\text{sec}}$$

$$\text{CONC} = \frac{\text{LOADING RATE}}{\text{AIR FLOW RATE}} = \frac{\frac{189 \text{ mg}}{\text{sec}}}{\frac{164,448 \text{ m}^3}{\text{sec}}} = \frac{0.00115 \text{ mg}}{\text{m}^3} = \frac{1.15 \mu\text{g}}{\text{m}^3}$$

b) NO_2 ($\mu\text{g}/\text{m}^3$)

$$\text{Loading RATE} = \frac{0.225 \text{ lbs}}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{1 \text{ g}} = \frac{28.34 \text{ mg}}{\text{sec}}$$

$$\text{AIR FLOW RATE} = 164,448 \text{ m}^3/\text{sec}$$

$$\text{CONC} = \frac{\text{LOADING RATE}}{\text{AIR FLOW RATE}} = \frac{28.34 \text{ mg/s}}{164,448 \text{ m}^3/\text{s}} = \frac{0.00017 \text{ mg}}{\text{m}^3} = \frac{0.17 \mu\text{g}}{\text{m}^3}$$

c) TOTAL SUSPENDED PARTICULATES ($\mu\text{g}/\text{m}^3$)

$$\text{Loading RATE} = \frac{1.125 \text{ lbs}}{\text{hr}} * \frac{1 \text{ hr}}{3600 \text{ sec}} * \frac{1 \text{ kg}}{2,205 \text{ lbs}} * \frac{1000 \text{ g}}{1 \text{ kg}} * \frac{1000 \text{ mg}}{1 \text{ g}} = \frac{141.7 \text{ mg}}{\text{m}^3}$$

$$\text{AIR FLOW RATE} = 164,448 \text{ m}^3/\text{sec}$$

$$\text{CONC.} = \frac{141.7 \text{ mg/sec}}{164,448 \text{ m}^3/\text{sec}} = \frac{0.00086 \text{ mg}}{\text{m}^3} = \frac{0.86 \mu\text{g}}{\text{m}^3}$$

APPENDIX II (cont.)

B.2.6) NO₂ (ug/m³)

LOADING RATE = SAME AS AIR MODEL #1 = 115 mg/sec

AIR FLOW RATE = 16,445 m³/sec

CONC = $\frac{115 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.007 \text{ mg/m}^3 = 7.0 \text{ ug/m}^3$

c) Total Suspended Particulates (ug/m³)

LOADING RATE = SAME AS AIR MODEL #1 = 8.06 mg/sec

AIR FLOW RATE = 16,445 m³/sec

CONC = $\frac{8.06 \text{ mg/sec}}{16,445 \text{ m}^3/\text{sec}} = 0.0005 \text{ mg/m}^3 = 0.50 \text{ ug/m}^3$

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



THE MAINE NARROW GAUGE RAILROAD COMPANY & MUSEUM

Portland, Maine

COMBUSTION EMISSION COMPARISONS

Monson #3 Coal Burning Locomotive

ASSUMPTIONS:

1.) Monson #3 burns a good quality metallurgical coal (semi-bituminous) that is considered premium steam coal. The coal is purchased under a tight, carefully monitored contract specification and the enginemen are highly trained and motivated concerning the proper combustion of this coal in the locomotive firebox.

2.) Historically, 2ft. gauge steam locomotives like the Monson #3 burn approximately 40 lbs of coal per mile during typical operations. The Maine Narrow Gauge Railroad Co. line is 1 1/2 miles long. This means each round trip is 3 miles long and about 10 trips per day can be made. Calculation of the total coal consumed per day follows:

$$40 \cdot 3 \cdot 10 = 1200 \text{ lbs of coal per day}$$

The total coal consumed per hour (on average) is calculated based on an 8 hour day:

$$\frac{1200}{8} = 150 \text{ lbs of coal per hour}$$

3.) All combustion emission comparisons are based on the quantity of ambient air used for the combustion process being compared. All air quantities are converted to standard conditions (atmospheric pressure @ 68 degrees f.) for a standard unit of comparison. The Monson #3 is conservatively estimated to consume 100% excess air above the air required for combustion. The air required for combustion is taken from STEAM POWER PLANT ENGINEERING by Gebhardt, page 78. This quantity is 7.5 lbs of dry air per 10,000 btu of solid fuel heating value. The approximate heating value of the locomotive coal is 14,771 btu per lb.

LOCOMOTIVE COMBUSTION AIR CONSUMPTION CALCULATION:

The combustion air required for operation of the Monson #3 for one day (8 hrs.) is calculated from the following equation:

$$c = 1200 \text{ lbs of coal per day}$$

$$h = 14771 \text{ btu per lb of coal}$$

$$a = 7.5 \text{ lbs of dry air per 10,000 btu of fuel heating value}$$

$$q = 0.0752 \text{ air density, lbs per cubic foot}$$

$$x = 1.5 \text{ excess air factor for 50% excess air}$$

$$\frac{\frac{c \cdot h}{10000} \cdot 7.5}{0.0752} \cdot x = 265170.878 \quad \text{cubic feet of ambient air required for combustion in Monson #3 locomotive}$$

Information for the above calculations obtained from The Petitjean Co., Inc. Fall City, Washington

COMBUSTION EMISSION COMPARISONS Gasoline Powered Automobiles

ASSUMPTIONS

1.) Assume one automobile running around Portland all day (8 hrs) at 25 miles per hour while obtaining a fuel mileage of 25 miles per gallon.

2.) The total gasoline consumption for one day (8 hrs) follows:

$$\frac{25 \cdot 8}{25} = 8 \quad \text{gallons per day @ 200 miles per day}$$

3.) 15 lbs of air are required for every lb of gasoline burned -- one gallon of gasoline weighs 7.1 lbs. Therefore the air required to burn one gallon of gasoline follows:

$$7.1 \cdot 15 = 106.5 \quad \text{lbs of air required to burn one gallon of gasoline}$$

4.) The gasoline engine runs at 5% excess air

AUTOMOBILE COMBUSTION AIR CONSUMPTION CALCULATION:

The combustion air required for operation of an average automobile for one day (8 hrs) in the greater Portland area is calculated from the following equation:

$$d = 106.5 \quad \text{lbs of air required to burn one gallon of gasoline}$$

$$e = 8 \quad \text{gallons per day fuel consumption}$$

$$y = 1.05 \quad \text{excess air factor for 5% excess air}$$

$$\frac{d \cdot e \cdot y}{q} = 11896.277 \quad \text{cubic feet of ambient air required for combustion in an average automobile}$$

COMPARISON OF AVERAGE AUTOMOBILE WITH MONSON #3 LOCOMOTIVE

$$\frac{\frac{c \cdot h}{10000} \cdot 7.5}{\frac{0.0752}{\frac{d \cdot e \cdot y}{q}}} = 22.29 \quad \text{Average automobiles} = \text{Monson \#3}$$

The information for the above calculations was obtained from the Pettigean Co., Inc. of Fall City, Washington and Veridyne, Inc. of Topsfield, Massachusetts.

COMBUSTION EMISSION COMPARISON
Diesel Powered Semi-Truck

ASSUMPTIONS:

- 1.) Assume one Semi-Truck running around Portland all day (8 hrs) at 20 miles per hour while obtaining a fuel mileage of 4 miles per gallon.
- 2.) The total diesel fuel consumption for one day (8 hrs) follows:

$$\frac{20 \cdot 8}{4} = 40 \quad \text{gallons per day @ 160 miles per day}$$
- 3.) 7.5 lbs of air are required per 10,000 btu of diesel fuel heating value. The heating value of diesel oil (#2 fuel oil) is 138,000 btu per gallon.
- 4.) The diesel engine runs at 25% excess air

DIESEL TRUCK COMBUSTION AIR CONSUMPTION CALCULATION:

The combustion air required for operation of an average Semi-Truck for one day (8 hrs) in the greater Portland area is calculated from the following equation:

- f = 40 gallons of diesel fuel per day
- g = 138000 btu per gallon of diesel fuel
- z = 1.25 excess air factor for 25% excess air
- a = 7.5 lbs of air per 10,000 btu of diesel fuel heating value
- q = 0.0752 air density, lbs per cubic foot

$$\frac{\frac{f \cdot g}{10000} \cdot a \cdot 1.25}{q} = 68816.489 \quad \text{cubic feet of ambient air required for combustion is an average Semi-Truck}$$

COMPARISON OF AVERAGE SEMI-TRUCK WITH MONSON #3 LOCOMOTIVE

$$\frac{\frac{c \cdot h}{10000} \cdot 7.5}{0.0752} \cdot x = 3.853 \quad \text{Average Semi-Trucks = Monson #3}$$

$$\frac{\frac{f \cdot g}{10000} \cdot a \cdot 1.25}{q}$$

COMBUSTION EMISSION COMPARISONS

Commercial Jet Airplane

ASSUMPTIONS.

- 1.) Assume one Boeing 737-300 with G.E. CF-6 engines making one takeoff from Portland International Airport
- 2.) 9,000 lbs of jet fuel A are required for the first hour of flight -- 5,000 lbs of fuel are required for cruising at altitude (30,000 - 37,000 feet). It take approximately 17 minutes from takeoff until cruising altitude is reached. The quantity of fuel burned during takeoff and climb is assumed to be the only emission relevant to the greater Portland area. This quantity of fuel is calculated as follows:

$$9000 - 5000 \cdot \frac{17}{60} = 7583.333 \quad \text{lbs fuel consumed during takeoff and climb}$$

- 3.) 15 lbs of air are required for every lbs of fuel burned.
- 4.) The jet engines run at 5% excess combustion air (excess dilution air for cooling burner cans is not included for emission purposes)

JET AIRPLANE COMBUSTION AIR CONSUMPTION CALCULATION:

The combustion air required for one 737-300 taking off from Portland International Airport is calculated from the following equation:

$i = 7583$ lbs fuel consumed during takeoff and climb

$j = 15$ lbs of air required to burn one lb of fuel

$y = 1.05$ excess air factor for 5% excess air

$q = 0.0752$ air density, lbs per cubic foot

$$\frac{i \cdot j \cdot y}{q} = 1588194.814 \quad \text{cubic feet of ambient air required for combustion during takeoff and climb of a 737-300 commercial airplane}$$

COMPARISON OF 737-300 AIRPLANE WITH MONSON #3 LOCOMOTIVE

$$\frac{\frac{i \cdot j \cdot y}{q}}{\frac{c \cdot h}{10000} \cdot 7.5} = 5.989 \quad \text{Monson #3 locomotives} = \text{one 737-300 takeoff and climb}$$

$$\frac{1588194.814}{0.0752} \cdot x$$

COMBUSTION EMISSION COMPARISONS Residential Wood Heating Stove

ASSUMPTIONS:

- 1.) Assume the average wood stove necessary to heat a 2,000 sq. ft. home is rated at 50,000 btu per hour.
- 2.) Assume that the wood stove is running at 80% efficiency and 50% capacity for one day (8 hrs). This means the stove is consuming wood fuel at the rate of 25,000 btu per hour and the total wood fuel consumption for the day follows;

$$\frac{25000 \cdot 8}{.8} = 250000 \quad \text{btu of wood fuel per day (8 hrs)}$$

- 3.) The wood stove is running at 50% excess air

WOOD STOVE COMBUSTION AIR CALCULATION:

$k = 250000$ btu of wood fuel per day (8hrs)

$u = 1.5$ excess air factor for 50% excess air.

$a = 7.5$ lbs of dry air per 10,000 btu of fuel heating value

$q = 0.0752$ air density, lbs per cubic foot

$$\frac{\frac{k}{10000} \cdot a \cdot u}{q} = 3740.027 \quad \text{cubic feet of ambient air required for combustion in an average residential wood heating stove}$$

COMPARISON OF AVERAGE WOOD STOVE WITH MONSON #3 LOCOMOTIVE

$$\frac{\frac{c \cdot h}{10000} \cdot 7.5}{0.0752} \cdot x = 70.901 \quad \text{Average wood stoves} = \text{Monson \#3}$$

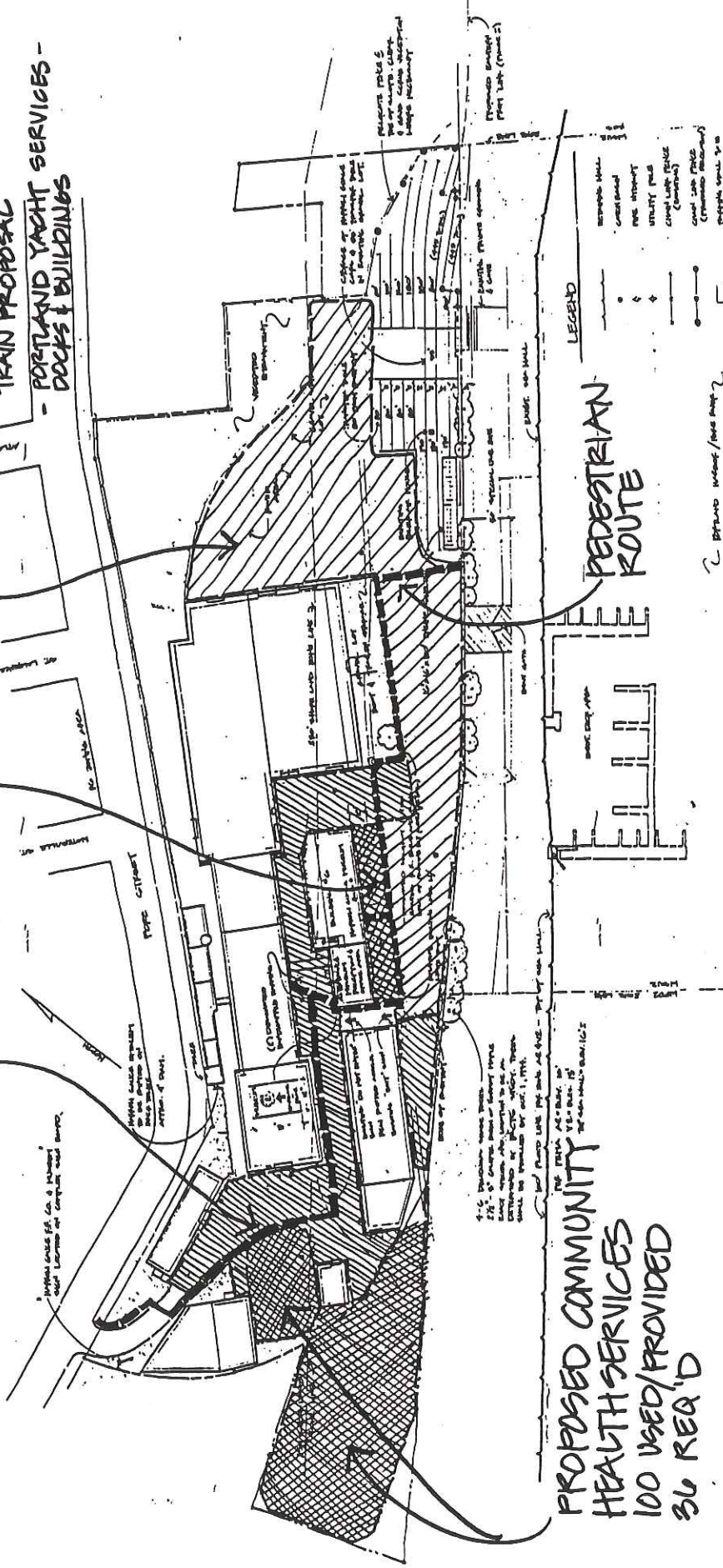
$$\frac{\frac{k}{10000} \cdot a \cdot u}{q}$$

PARKING DEDICATED/USED BY EXISTING TENANTS 65 USED, 95 REQ'D

MORR MUSEUM PARKING - 4 USED 20 SPACES REQ'D/PROVIDED

ADDITIONAL/OVERFLOW PARKING NOT CURRENTLY USED (180 SPACES)

- MNGRR CO TRAIN PROPOSAL
- PORTLAND YACHT SERVICES - DOCKS & BUILDINGS



PROPOSED COMMUNITY HEALTH SERVICES 100 USED/PROVIDED 36 REQ'D

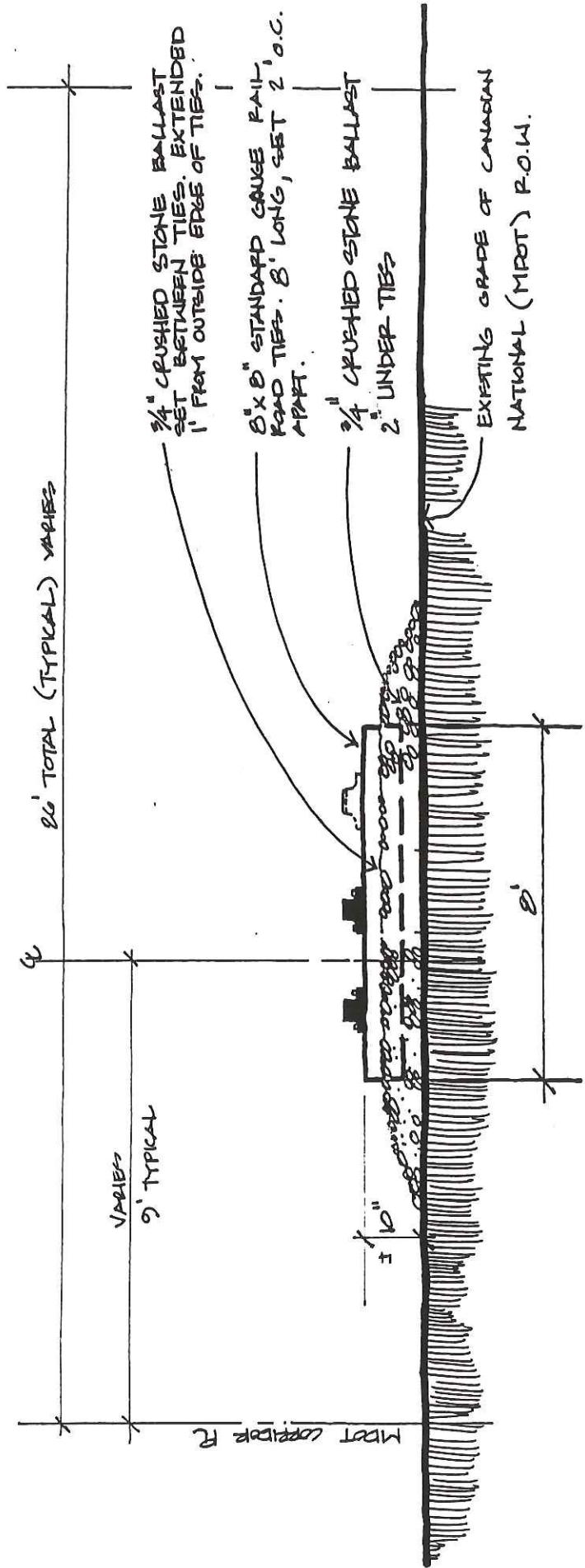
PEDESTRIAN ROUTE

PARKING DISTRIBUTION DIAGRAM
58 FORE STREET
PORTLAND, ME.

mohr & seredin, landscape architects

scale: 1" = 50' (N.T.S.)
date: 9.93
6/6/94

174

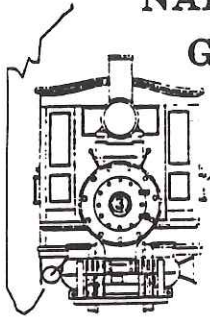


TYPICAL TRACK CROSS SECTION

1" = 2'

MAINE
NARROW
GAUGE

RAILROAD Co.
&
MUSEUM



58 FORE STREET • PORTLAND, MAINE 04101 • (207) 828-0814

May 13, 1994

Mrs. Jadine O'Brien
Chairperson, Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Mrs. O'Brien:

Having heard that the planning board is in the process of evaluating the site plan of the Maine Narrow Gauge Railroad and the Portland Trails recreational path, I wish to describe to you our understanding of the health and air quality impact of the train on the trails. First, the pertinent emissions from the railroad operation will include sulfur dioxide, unburned hydrocarbons and particulates. We will be burning a metallurgical grade of coal which is low in sulfur (0.5%) and particulates. The sulfur dioxide emissions will be within regulatory restrictions applied to coal and diesel fuel combustion (i.e. less than 2%). The issue of unburned hydrocarbons and petroleum polymers is generally confined to diesel engines of which we have two. We expect each of these engines to have the impact of a single diesel truck because the diesel locomotives in fact have truck engines for power. Interestingly, from a health perspective the greatest issue from our coal burning locomotives is particulates, namely exhaust particles containing "fly ash". I have discussed the health effects of fossil fuel and coal burning with George E. Bokinsky, M.D. of the Pulmonary Department at Maine Medical Center. In particular, I have discussed coal burning and resultant production of fly ash with Dr. Bokinsky. Some ash does escape with the stack smoke but this can be held to a minimum by visual monitoring of the engine operation. In addition, prevailing winds will cause rapid dissipation of the remaining particulates in the area of concern. An additional issue is associated with the ashes which are collected beneath the engine fire box. If these are not properly handled (such as ash dropping onto the track/roadbed), they can create an airborne particulate problem of significance, similar to dust coming from a dirt road. Our ash will be disposed of in sealed containers and not allowed to escape, and the rate of travel of the train will be slow, about 10-15 mph. Thus, the way we intend to control these air quality and health concerns is to: (a) burn a low-sulfur, low-ash coal (metallurgical grade source already secured), (b) employ a well-trained and highly motivated engineer staff who will maintain an efficiently burning and therefore clean burning energy source (visible smoke means inefficient operation of engine and subsequent emission of particulates), and (c) maintain high quality practices regarding the proper handling and disposal of ash produced by the engines. Finally, I would note that our engines are very small and our frequency of operation will be limited. We expect that these factors

combined with the above described efforts to avoid unwanted emissions will answer any concerns regarding air quality and potential health problems associated with our operations. We will continue to work with Dr. Bokinsky on these matters as appropriate. As an organization, we remain committed to acting as responsible neighbors in the Eastern Promenade area.

Yours sincerely,



Gilbert M. Wilcox, M.D.
Trustee Maine Narrow Gauge Railroad
Museum

GMW;dlg

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

Permit to Enter onto State-owned Railroad Property

(Individual)

WHEREAS, J. E. Lancaster and others as Employees/Volunteers of Maine Narrow Gauge Railroad Company & Museum, 58 Fore Street, Portland, Maine 04101 (hereinafter "Permittee") has requested the permission of STATE OF MAINE DEPARTMENT OF TRANSPORTATION (hereinafter "MDOT") to enter and be upon or about the right of way, or other premises, of its Railroad at Portland, Maine for his own purposes and benefit, and particularly for the purpose of constructing temporary trackage, including turnouts, connecting to Portland Company property on MDOT Right of Way between India Street and a point approximately 500' North of the Portland House/Fort Allen Park property line. This location is in conformance with letter from Portland Trails dated August 25, 1993. Final location of track to be determined as part of negotiations with Portland Trails, etc. for use by the Maine Narrow Gauge Railroad Company & Museum at Portland, Maine.

NOW, THEREFORE, MDOT hereby grants permission, for a period of 185 days commencing November 29, 1993 subject to cancellation at any time and in no event be assignable or transferable, to Maine Narrow Gauge Railroad Company and Museum to enter or be upon or about its right of way or other premises, at the location described above solely for the purpose specified above and no other purposes: provided, however, that this permission shall be of no force and effect unless and until said Permittee duly signs and executes the GENERAL RELEASE AND INDEMNITY which is hereinafter set forth.

STATE OF MAINE DEPARTMENT
OF TRANSPORTATION

By: Allan H. Bartlett 1/7/94
Allan H. Bartlett, Acting Director
Rail Transportation Division

GENERAL RELEASE AND INDEMNITY

In consideration of MDOT granting to the undersigned the permission above described, the undersigned, understanding the risk and danger assumed by him and attendant upon his exercise of said permission and that MDOT is under no duty or obligation to give such permission, hereby assumes all risk of injury to the Permittee (including death) and of loss of or damage to his property

occurring or arising while or resulting from being upon or about the said right of way, or other premises, of the said MDOT, whether due in whole or in part to the condition of operation, negligent or otherwise, of said right of way, or other premises, or in whole or in part to the acts or omissions, negligent or otherwise, of the officers, agents, servants, or employees of said MDOT or otherwise: and the undersigned for himself, his executor, administrator, heirs at law, next of kin and his successors and assigns hereby releases and forever discharges said MDOT, its successors and assigns from any and all claims, demands, actions and causes of action which the undersigned, his executor, administrator, heirs at law, next of kin and his successors and assigns have, could or might have against the said MDOT, its successors and assigns, for injury to his person (including death) and loss of or damage to his property occurring or arising while, or resulting from, being upon or about said right of way or other premises of the said MDOT, whether due in whole or in part to the condition or operation, negligent or otherwise, of said right of way, or in whole or in part to the acts or omissions, negligent or otherwise, of the officers, agents, servants, or employees of the said MDOT or otherwise. Further, the Permittee agrees to indemnify and hold harmless MDOT, its successors and assigns, from any and all loss, cost, claims, demands, damages, actions and causes of action, including attorney's fees, which the undersigned, his executor, administrator, heirs at law, next of kin and his successors and assigns, have, could or might have against the said MDOT, its officers, agents, servants, or employees, as well as its successors and assigns, for injury (including death) and loss of or damage to Permittee's property occurring or arising while or resulting from, being upon or about said right of way, or other premises, of said MDOT, whether due in whole or in part to the condition or operations, negligent or otherwise, of said right of way, or other premises or in whole or in part to the acts or omissions, negligent or otherwise, of MDOT, its officers, agents, servants, or employees, or otherwise.


I HAVE READ THE ABOVE RELEASE AND INDEMNIFICATION AGREEMENT CAREFULLY AND I UNDERSTAND THAT I AM ASSUMING ALL RISKS OF EVERY KIND AS SET FORTH IN SAID RELEASE IN EXERCISING THE PERMISSION GRANTED ABOVE.

Dated: November 29, 1993

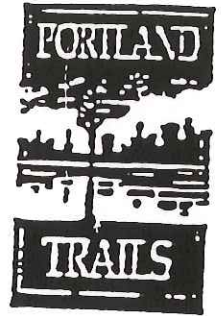
PERMITTEE



WITNESS


NAME

PORTLAND TRAILS



August 25, 1993

Phineas Sprague, Jr.
Maine Narrow Gauge Railroad
58 Fore Street
Portland ME 04101

Re: Eastern Promenade Rail-Trail Corridor - Maine Narrow Gauge
Railroad Location

Dear Phineas:

This letter is in response to your request for Portland Trails' comments on your proposed location of the Maine Narrow Gauge Railroad track along the base of the Eastern Promenade on the land which the Maine Department of Transportation (MDOT) will soon be acquiring via The Trust for Public Land from Canadian National Railway Company. As you know, Portland Trails along with The Trust for Public Land, the City of Portland and the Maine Department of Transportation have been working on this acquisition for over two years. We expect to close on the acquisition on August 30.

I think virtually everyone agrees that the acquisition of almost two miles of waterfront land in the City of Portland for public use represents a unique transportation and recreational opportunity for the City and for the State.

We assume that general questions regarding the Maine Narrow Gauge Railroad (e.g., general location, hours of operation, safety measures, etc.) are ones which will be discussed in the context of a public forum before the City of Portland Planning Board and the City Council with input from the citizens of Portland and neighborhood groups, including the Munjoy Hill Neighborhood Organization. Portland Trails' general position on rail and trail use of the Eastern Promenade Corridor is as follows:

1. Planning and improvement of the Eastern Promenade Corridor should be done once, done well, and done in a way which will fully utilize this magnificent opportunity. In this vein we think that several cross section drawings showing proposed

PORTLAND TRAILS
One City Center
Post Office Box 17501
Portland, Maine 04101

Phineas Sprague, Jr.
August 25, 1993
Page 2

locations of the rail line and adjacent trails at several points along the Corridor would be very useful.

2. The City of Portland will take the lead in organizing the plans for the Corridor, but will work with Portland Trails, MDOT, the Friends of the Parks, neighborhood groups, and other interested parties including the Maine Narrow Gauge Railroad and the Maine Olmsted Alliance.
3. Appropriately located, a rail line is compatible with adjacent pedestrian and bicycle trails.
4. The rail line should be located as close to the inland edge of the land being conveyed to MDOT as is technically and legally possible so as to provide ample room for a pedestrian and a bicycle trail and other recreational use of the waterfront between the rail line and the water. The only possible exception would be that portion of the proposed rail line which would pass through the 26-foot wide corridor next to City land leased to BIW.
5. Barriers between the trail corridor and the rail line, if any, which may be required for reasons of public safety should be as unobtrusive as reasonably possible.
6. The rail line should not extend onto the old trestle and swivel bridge until such time as the swivel bridge is fully operational.

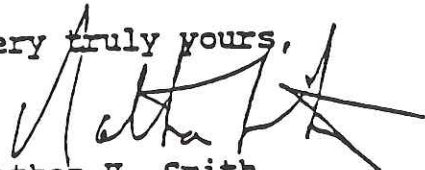
As a practical matter, what this means is that we believe that the rail line should be on the inland side of the trail Corridor from a point about 900 feet easterly from the end of Commercial Street all the way to the railroad trestle.

While Portland Trails' preference is that any installation of tracks follow more complete planning, we recognize that you are under some time constraints to get a portion of the railroad operating. Assuming you can reach agreement with MDOT and obtain appropriate approvals from the City of Portland, perhaps an initial section of track could extend south to Commercial Street and north toward Fish Point from the Portland Company property before final plans are set for the entire Corridor.

Phineas Sprague, Jr.
August 25, 1993
Page 3

Finally, would you please keep us advised of your plans for the rail line location as they evolve.

Very truly yours,



Nathan H. Smith
Vice President
Portland Trails

cc Peter Monro, President, Portland Trails
Joseph Gray, Director of Planning and Urban
Development, City of Portland
Virginia Hildreth, Director of Economic Development,
City of Portland
Allan Bartlett, Maine Department of Transportation
Ed Ashley, Maine Narrow Gauge Railroad ✓



THE VICTORIA LOCK, AT PORT AND, ME, ORIGINALLY ERRECTED FOR THE GREAT EASTERN STEAMSHIP CO, AS IT APPEARED A FEW HOURS BEFORE THE ARRIVAL OF THE PRINCE OF WALES.

Historic Crosswalk & Trackage Near Fish Point

NOTE: Not part of phase one.

Rails-With-Trails: Sharing Corridors For Recreation and Transportation



By Michael Brilliot and
Julie A. Winterich



RAILS
-TO-
TRAILS
CONSERVANCY

1400 16th Street, NW, #300
Washington, D.C. 20036
202-797-5400 (phone)
202-797-5411 (fax)

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RAILS-WITH-TRAILS

Sharing Corridors for Transportation and Recreation

Can trails safely function alongside active rail lines?

This is the question that the Rails-to-Trails Conservancy set to answer through a detailed survey of trail managers in charge of 16 existing corridors, in 11 states, which have parallel side-by-side rail lines and trails.

The result proved to be a resounding "Yes!" -- rails and trails can safely and satisfactorily co-exist. In fact, our research indicates that trails alongside active rail lines could prove to become a significant addition to our nation's transportation and recreation system in the 21st Century.

Before 1986, only a handful of what we will refer to as "rails-with-trails" were in existence. Today, because of the growth of the trails movement and the restructuring of the railroad industry, rails-with-trails projects are blossoming across the country. For instance:

- * In the cities of San Diego, Calif., and Chapel Hill, N.C., trails alongside rails provide students and faculty with a vital link to their universities.
- * In Zanesville, Ohio, a rail-with-trail has so successfully provided a safe environment for families to walk and bike, the city is working with Conrail to expand the trail an additional nineteen miles.
- * In the Chicago Metropolitan area, the Illinois Prairie Path gives city residents the opportunity to experience some of the last remnants of the region's prairie ecosystem.
- * In Washington state, the Grandview/Sunnyside Pathway connects the two rural towns of Grandview and Sunnyside with a non-motorized alternative to the congested adjacent highway.

The 16 rails-with-trails surveyed are as varied as trails built on abandoned rail corridors; some stretch through rural terrain while others connect urban and suburban areas.

RTC found a wide variance in the type of railroad adjacent to the trail, from mainlines with a continuous parade of 80 mile-per-hour "hot shot" freights to industrial spurs with 15 mile-per-hour weekly locals.

Fifteen of the 16 trails share one paramount fact: no trail user/train accident. The exception, the Illinois Prairie Path, had only one train-related accident in its 27-year history. This accident involved a bicyclist injured by a slow moving train when, ignoring bells and flashing lights, she rode around a lowered crossing gate. (Technically, the accident did not occur on the trail corridor, but at a street/railroad grade-crossing adjacent to the trail.) Trails adjacent to rails appear to be no more dangerous than trails alone or adjacent to city streets.

For the purpose of this analysis, the 16 trails are grouped into two broad categories: those adjacent to branch lines or industrial spurs, and those adjacent to mainlines or mass transit lines.

Typically, branch lines and industrial spurs have low operating speeds and infrequent service. The trails surveyed that fall under this category include the Grandview/Sunnyside Pathway, the Pedestrian Pathway, the Waterfront Trail and the Duwamish Trail, all in Washington; the Rock Island

Trail in Colorado; the Libba Cotton Bikepath in North Carolina; and The Elk River Trail in West Virginia.¹

Adjacent to rails with 10 to 25 mile-per-hour trains running between three times daily to once monthly, these trails tend to run much closer to the tracks than those adjacent to mainlines. Most of the trails in this group are separated from the railroad tracks by a distance of less than 30 feet, with many as close as eight feet. Frequently, the trails have minimal barriers and those with barriers most commonly use vegetation and slight grade separation.

In contrast, mainline trains and mass transit lines typically travel at higher speeds and operate more frequently. The trails in this group include the Green Bay Trail and the Illinois Prairie Path, both in Illinois; the La Crosse River State Trail in Wisconsin; the Celina/Coldwater Bike Trail and the Zanesville Riverfront Pathway both in Ohio; the Heritage Trail in Iowa; the Rose Canyon Bike Path in California; the Southwest Corridor Park Trail in Massachusetts; and the Traction Line in New Jersey.

The majority of these trails are separated from the railroad tracks by 50 to 100 feet and by some type of barrier, most commonly grade separation, vegetation (including trees), ditches or some kind of fencing. However, proximity to a highly active, high-speed rail line does not necessarily require greater separation between the tracks and trail. RTC's findings include a few successful examples of trails residing close to mainlines. Developed within 20 feet from commuter rail tracks, the Traction Line installed a chain link fence to accommodate this close proximity. The Southwest Corridor Park Trail in Boston, separated from a mainline by a distance varying in length from 20 to 50 feet, installed a cement wall and a chain link fence along the entire trail. Two other trails, the Illinois Prairie Path and the Zanesville Bikeway, are separated by fences in the few areas where they are within 15 to 25 feet of the tracks.

A majority of the rails-with-trails managers indicated peak hours of rail service do not correspond with peak hours of trail use. In the case of the Celina/Coldwater Trail, most of the trains run at night. For trails next to commuter and mass transit lines, such as the Illinois Prairie Path, the Southwest Corridor Park Trail and the Green Bay Trail, peak rail service occurs during the week while peak trail use occurs on weekends.

Of all the managers surveyed, only three reported minor problems with railroad maintenance practices infringing upon the trail. The Southwest Corridor Park Trail, the Illinois Prairie Path and the La Crosse River State Trail all reported that railroad vehicles occasionally use the trail surface to access the active railroad grade.

The manager of the Southwest Corridor Park Trail also benefits from railroad maintenance practices because of an agreement requiring the transit agency to help remove litter along the trail easement, saving the park approximately \$50,000 annually. This agreement will expire in 1995.

In addition, the managing agency of the Pedestrian Pathway found the adjacent railroad's maintenance procedures helpful. Semi-annually, Burlington Northern clears brush and sprays weed along the tracks and along the side of the corridor without the trail. Because of the need to prevent brush fires in the summer, the railroad saves the agency from sole responsibility of clearing the entire corridor.

With the exception of the Green Bay Trail, all the trails are insured and most are covered by a city, county or state self-insurance policy. Of all the insured trails, only the Libba Cotton Bikepath was required to release the corridor's owner (which happens to be the University of North Carolina) from all liability for accidents on the trail.

¹ Although the Waterfront Trail is adjacent to a historic trolley running at 30-minute intervals, it is included with the branch line/spur group because the trolley runs at speeds of 10-15 miles-per-hour.

Only the La Crosse River State Trail reported a train-related accident claim filed against the managing agency. The accident involved a farm animal breaking through the trail's fence onto the railroad tracks where it was hit and killed by a train. As a result of the claim, the state reimbursed the adjacent farmer for the cost of the animal.

Significantly, no trail manager reported any claims filed against the adjacent railroad by a trail user. Perhaps, because of this fact and the low incidence of accidents, managers also reported railroads were either indifferent to rails-with-trails, or in some cases, very favorable toward the arrangement.

With the exception of the Duwamish Trail, railroads were also not opposed to the development of an adjacent trail. For the Duwamish Trail, the railroad feared an adjacent trail would cause increased liability. However, because the city of Seattle owned the right-of-way, construction of the trail continued.

In another case, the Sante Fe Railway did not oppose the Rose Canyon Bike Path, but opposed and successfully stopped the construction of at-grade trail crossings; the railroad required trail crossings at above or below grade only.

Very few of the managers surveyed obtained land for their trail from the active adjacent railroad. In most cases, the trail corridor was either obtained from another railroad abandoning a line parallel to the active line, or was part of an existing state-owned right-of-way such as a highway right-of-way. Only the Zanesville Riverfront Bikepath and the Pedestrian Pathway obtained their trail right-of-way from the adjacent railroad. The city of Zanesville in Ohio both purchased and obtained a partial easement from Conrail, while the city of Issaquah in Washington built its trail by obtaining unofficial permission from Burlington Northern; BN intends to sell the entire corridor to the city in the future.

Also, a number of trail projects are underway in which planners intend to obtain easements from private freight railroads to construct their trail. For example, the planners for the Illinois Prairie Path are currently researching obtaining an easement from the Chicago & North Western to extend the trail in West Chicago; and the managing agency for the Philadelphia-Valley Forge Bikeway is working with Conrail to obtain an easement for a trail extension.

RTC receives an ever-increasing number of inquiries from trail planners and citizen activists on the feasibility of placing trails alongside active rail lines. Rails-with-trails is a growing trend in the 1990s, not only because of the growing rail-trail movement, but also because of the changing structure of the railroads. The continued contraction of private rail yards and multi-track lines, the acquisition of rail corridors by public transit agencies for mass transit, and the increasing number of historic and tourist railroads have presented many communities with a new transportation and recreation opportunity. And because of new bicycle and pedestrian funding sources, money is available to take advantage of this opportunity. Rails-with-trails may be the solution for providing communities auto-free pathways for transportation and recreation.

Methodology

RTC first consulted with trail planners currently working on new rails-with-trails projects to discuss what information would be helpful for their projects. Their comments were compiled with RTC's questions into a written survey which was sent to the trail managers of 20 existing rails-with-trails in 13 states. The specific list of questions asked appears at the end of this study under the section titled: "Rails-with-Trails Responses." RTC received responses from the managers of 16 trails. Almost all the surveys received were followed up with a telephone call for more detailed information.

Findings

Following are the results of the study. Some of the related survey questions and answers were combined in the following results. The percentages of respondents and the number of respondents are listed for each question when appropriate.

The Site

1. What is the length of the trail?

Average length = 8.2 miles
Range = .38 - 50 miles

2. What type of terrain does the trail pass through?

Residential area..... 9 (56%)
Urban..... 8 (50%)
Commercial area..... 8 (50%)
Rural terrain..... 6 (38%)
Industrial area..... 5 (31%)
Agricultural area..... 5 (31%)
Nature preserve..... 5 (31%)
Suburban terrain..... 4 (25%)

Note: Trail managers usually identified more than one type of terrain through which their trail passed.

3. For how many miles does the trail run alongside an active rail corridor?

Average = 3.7 miles
Range = .38 - 18 miles

Adjacent 50% or more of their length..... 13 (81.5%)
Adjacent less than 50% of their length..... 3 (18.5%)

4. How wide is the full rail-with-trail corridor?

Average = 188 feet
Range = 18 - 1,500 feet

0-30 feet..... 2 (12.5%)
31-60 feet..... 4 (25%)
61-100 feet..... 4 (25%)
101-150 feet..... 1 (6%)
151-200 feet..... 3 (19%)
Greater than 200 feet..... 1 (6%)
Not applicable..... 1 (6%)

Note: The manager of the Elk River Trail responded "N/A" because the trail is in county park land adjacent to the rail corridor.

5. How wide is the trail?

Average trail width = 10 feet
Range = 8-14 feet

8 feet..... 5 (31%)
9 feet..... 2 (12.5%)
10 feet..... 7 (44%)
14 feet..... 2 (12.5%)

6. What is the distance between active track and trail? (Measurement is from the centerline to the nearest edge of the trail.)

Average distance = 49 feet
Range = 8-200 feet

Distance of 8-12 feet..... 4 (25%)
Distance of 13-20 feet..... 1 (6%)
Distance of 21-50 feet..... 7 (44%)
Distance of 51-90 feet..... 1 (6%)
Distance of 91-100 feet..... 2 (12.5%)
Distance of greater than 101 feet..... 1 (6%)

7. Is there a barrier separating the tracks and trail?

Yes..... 13 (81%)
No..... 3 (19%)

Vegetation as a barrier..... 7 (44%)
Grade separation..... 6 (37.5%)
Chain link fence..... 3 (19%)
No separation..... 3 (19%)
Ditch..... 2 (12.5%)
Wire fence..... 1 (6%)
Split rail fence..... 1 (6%)
Cement wall..... 1 (6%)

Note: Many trail managers identified more than one type of separation.

8. Does the trail cross the tracks?

Yes.. 8 (50%)
No... 8 (50%)

The Average number of crossings = 1.4
The Range = 0-5

Note: All crossings were at-grade with one exception; the Illinois Prairie Path has an above-grade (bridge) crossing over the mainline. Five (62%) of those trails with at-grade crossings have warning signs for trail users.

Rail Operation

9. What railroad or agency owns the adjacent active rail corridor?

Class I (major freight) railroad.....	8 (50%)
Other public agency (i.e. a city or university).....	4 (25%)
Public transit agency.....	3 (19%)
Short line.....	1 (6%)

Note: The Rose Canyon Bike Path is now adjacent to a publicly-owned active rail corridor, but when the trail was built the corridor was owned by Sante Fe Railway.

10. Did the railroad oppose creation of the trail?

Yes.....	1 (6%)
No.....	15 (94%)

Note: After completion of the trail, no manager reported the railroad as unfavorable towards the trail.

11. What type of rail line does the trail run alongside?

Mainline.....	7 (44%)
Industrial spur.....	4 (25%)
Mass transit line.....	3 (19%)
Branch line.....	2 (12.5%)
Trolley line.....	1 (6%)

Note: The manager of the Southwest Corridor Park Trail indicated that the trail runs alongside both a mainline and a mass transit line.

12. Approximately how frequently do trains run on adjacent tracks?

3-9 trains per hour.....	2 (12.5%)
1-2 trains per hour.....	4 (25%)
9-16 trains a day.....	1 (6%)
4-8 trains a day.....	2 (12.5%)
1-3 trains a day.....	3 (19%)
1-4 trains a week.....	2 (12.5%)
1-2 trains a month.....	1 (6%)
Out of service.....	1 (6%)

Note: The manager of the Elk River Trail responded that the adjacent rail is currently out of service, but service may resume in the future.

13. Do peak hours of rail use correspond with peak hours of trail use?

Yes.....	2 (12.5%)
No.....	8 (50%)
Occasionally.....	2 (12.5%)
Unknown.....	3 (19%)
Not applicable.....	1 (6%)

14. What is the approximate maximum train speed?

The average maximum train speed = 31 mph
Range = 10-80 mph

Uses

15. What uses are permitted?

Walking/hiking/jogging.....	16 (100%)
Bicycling.....	16 (100%)
In-line skating.....	9 (56%)
Cross country skiing.....	7 (44%)
Equestrian.....	2 (12.5%)
Snowmobiling.....	2 (12.5%)

16. Are any uses prohibited because the trail is adjacent to an active rail line?

Yes..... 0%
No..... 100%

17. Approximate number of trail user-days annually?

Average = 355,717
Range = 30,000 - 1.5 million

Note: Only six managers had information to respond to this question.

Liability Insurance

18. Is the trail insured against liability?

Yes, self-insured.....	10 (63%)
Yes, private insurance.....	5 (31%)
No.....	1 (6%)

19. Is your agency required to indemnify the rail carrier against liability?

Yes..... 1 (6%)
No..... 15 (94%)

Note: Only the Libba Cotton Trail was required to indemnify the railroad against liability.

20. Was insurance difficult to acquire?

Yes..... 0%
No..... 100%

Accidents

21. Have any train-related accidents occurred on the trail? (This question includes only those accidents caused by the path being adjacent to an active rail line, such as direct train-user collisions or accidents caused by debris left on the path by the railroad.)

Yes..... 1 (6%)

No..... 15 (94%)

Note: Only the Illinois Prairie Path reported a train-related accident. Ten years ago, a bicyclist was injured when she ignored bells and flashing lights and rode around a lowered crossing gate at a street/railroad grade crossing adjacent to the trail.

22. Were any train-related accident claims filed against your agency?

Yes..... 1 (6%)

No..... 15 (94%)

Note: Only the manager for the La Crosse River State Trail reported a train-related accident claim filed against the trail. An adjacent landowner's farm animal broke through the trail's right-of-way fence and was hit and killed by a train.

23. Are you aware of any claims being filed against the railroad?

Yes..... 0%

No..... 100%

Maintenance

24. Who is primarily responsible for trail maintenance?

City or town..... 9 (56%)

County..... 4 (25%)

State..... 2 (12.5%)

Friends of the trail group..... 1 (6%)

Note: Two county-maintained trails, the Illinois Prairie Path and the Grandview/Sunnyside Pathway, also receive assistance for trail maintenance from friends of the trail groups.

25. How much is spent on maintenance annually?

Average = \$48,312.50

Range = \$1,000 - \$200,000

Note: Only eight trail managers responded to this question.

26. Does the railroad help maintain the corridor?

Yes..... 2 (12.5%)

No..... 14 (87.5%)

Note: The Pedestrian Pathway's manager noted the railroad clears brush and sprays weeds along the tracks and along the side of the corridor without the trail. Because of the need to prevent brush fires in the summer, the railroad's assistance in brush and weed removal saves the managing agency from sole responsibility of clearing the entire corridor.

The manager for the Southwest Corridor Park Trail reported they negotiated an agreement with the parallel transit agency in which the agency assists in litter removal along the trail easement; this saves the trail managing agency approximately \$50,000 annually. Upon expiration of this agreement in two years, the Southwest Corridor Park Trail will assume full responsibility for litter and trash removal.

27. Does railroad maintenance infringe upon the trail corridor?

Yes... 3 (19%)
No... 13 (81%)

Note: The three trail managers who responded "yes" to this question have occasional problems with railroad maintenance vehicles using the trail surface to access the railroad tracks.

Corridor Acquisition

28. Does your agency own the trail corridor?

Full ownership..... 11 (69%)
Partial ownership..... 3 (19%)
No ownership..... 2 (12.5%)

Note: Partial ownership means the managing agency owns part of the trail and received an easement or unofficial permission for the remainder.

29. If yes, how much did you pay for it?

\$0..... 7 (50%)
Between \$60,000 - \$555,000 (\$311,020 average)..... 5 (36%)
Cost unknown..... 2 (14%)

30. Did you obtain an easement?

Of those not claiming full ownership:
A partial easement was obtained by..... 2 (40%)
A full easement was obtained by..... 2 (40%)
Unofficial permission was obtained by..... 1 (20%)

Note: The managing agency for the Pedestrian Pathway has unofficial permission to use part of the railroad's right-of-way for a trail because the railroad intends to sell the entire corridor to the city in the future.

31. How was your trail funded?

City funds..... 7 (44%)
County funds..... 5 (31%)
State funds..... 5 (31%)
Federal funds..... 5 (31%)
Private sources..... 5 (31%)

Note: Most trail managers identified more than one source. For specific funding sources, see survey responses at end of study.

RAILS-WITH-TRAILS SURVEY

Site Description

Trail Name	City	County	State	Date opened	Trail length in miles
Celina/Coldwater Bike Trail	Celina and Coldwater	Mercer	Ohio	1986	4.6
Duwamish Trail	Seattle	King	Washington	1988	4.5
Grandview/Sunnyside Pathway	Grandview/Sunnyside	Yakima	Washington	1991	6.3
Green Bay Trail	Highland Park	Lake	Illinois	1966-1981	9.5
Heritage Trail	Dubuque to Dyersville	Dubuque County	Iowa	1985	27.0
Illinois Prairie Path	Metropolitan Chicago	DuPage, Kane and Cook	Illinois	1966	50.0
La Crosse River State Trail	Sparta and Medary	Monroe and La Crosse	Wisconsin	1987	21.5
Libba Cotton Bikepath	Carrboro	Orange	North Carolina	1982	0.38
Pedestrian Pathway	Issaquah	King	Washington	1989	1.17
Rock Island Trail	Colorado Springs	El Paso	Colorado	1991	3.0
Rose Canyon Bike Path	San Diego	San Diego	California	1976	1.2
Southwest Corridor Park	Boston	Suffolk	Massachusetts	1987	4.7
The Elk River Trail	Charleston	Kanawha	West Virginia	1991	1.0
Traction Line Recreation Trail	Morris Township	Morris	New Jersey	1986	2.0
Waterfront Trail	Seattle	King	Washington	1989	0.8
Zanesville Riverfront Bikepath	Zanesville	Muskingum	Ohio	1989	2.9

Trail Name	Type of terrain through which trail passes	Miles trail parallels active rail corridor	Full width of rail-with-trail corridor	Trail width
Celina/Coldwater	Rural and agricultural	4.6	120 ft	10 ft
Duwamish	Urban, residential, commercial, industrial and nature preserve	1.5	18 ft	8-10 ft
Grandview/Sun	Rural	6.3	40 ft avg.	8 ft
Green Bay	Urban, suburban and residential	3.7	100 ft	10 ft
Heritage Trail	Rural, agricultural and nature preserve	2.5	200 ft	10 ft.
Illinois Prairie	Rural, suburban, residential, commercial, industrial, agricultural and nat. preserve	5.0	166 ft avg.	8-10 ft
La Crosse River	Rural, industrial, agricultural and nature preserve	18.0	200 ft	10 ft
Libba Cotton	Urban and commercial	0.38	54 ft	14 ft
Pedestrian Path	Urban, residential and commercial	1.17	60 ft.	8 ft
Rock Island	Urban, residential and commercial	3.0	100 ft.	10 ft.
Rose Canyon	Suburban and industrial	1.2	1,500 ft	10 ft
Southwest Corr.	Urban, residential, commercial and industrial	3.5	100 ft min.	8 ft
Elk River	Nature Preserve (Park)	1.0	N/A	12-15 ft
Traction Line	Urban, suburban, residential and commercial	1.8	40 ft	10 ft.
Waterfront	Urban, residential and commercial	0.8	18 ft	8 ft
Zanesville	Rural and residential	2.9	100 ft	8 ft

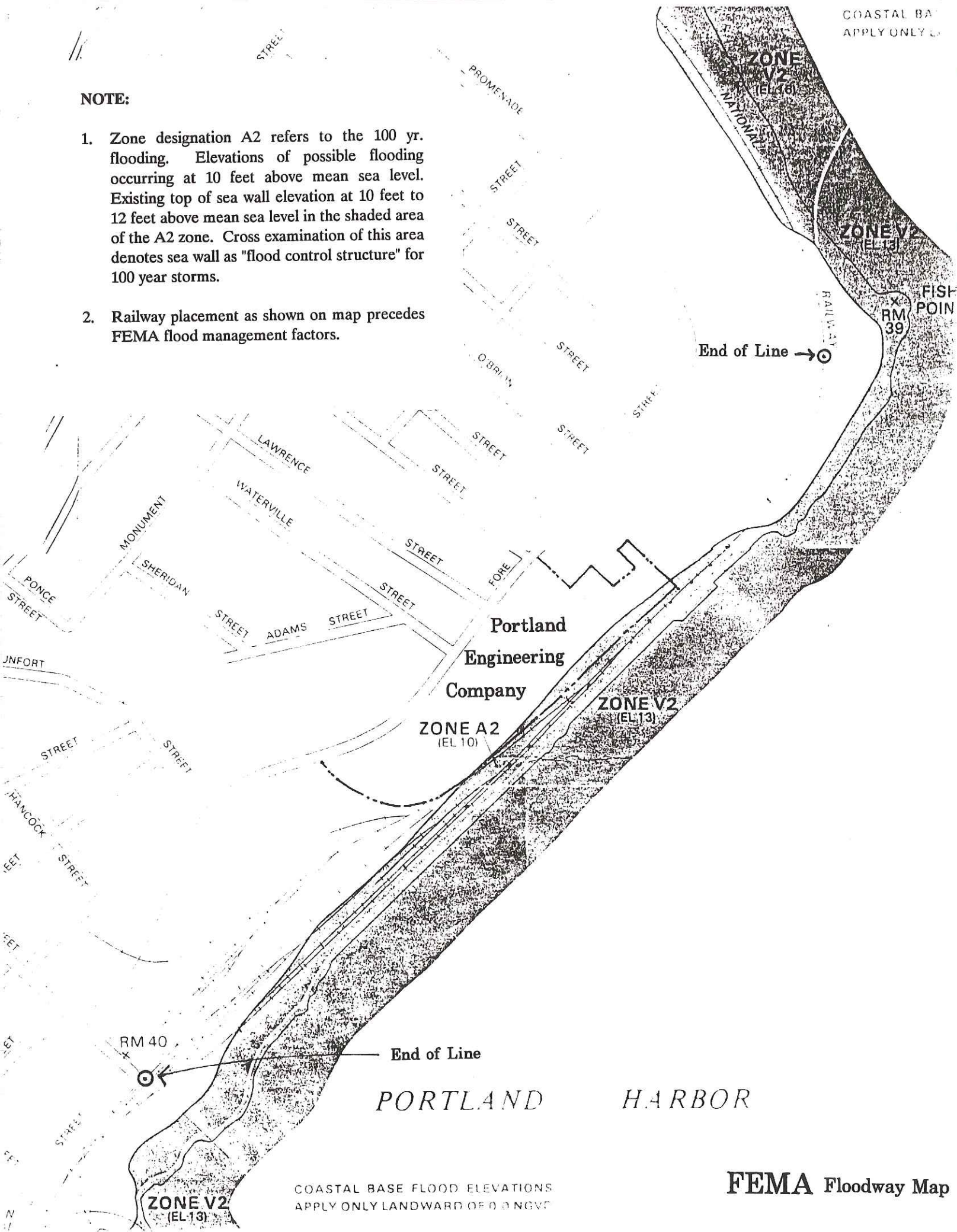
<u>Trail Name</u>	<u>Distance between track and trail</u>	<u>Barriers between track/trail</u>	<u>What form</u>
Celina/Coldwater	60 ft with a few sections as close as 15 ft	Yes	Wire fence, or ditch with standing water and vegetation
Duwamish	8 to 15 ft	No	N/A
Grandview/Sun	30 ft	Yes	Vegetation and grade separation
Green Bay	50 ft avg.	Yes	Vegetation and grade separation
Heritage Trail	90-100 ft	Yes	Steep ditch, large hills and prairie/forest vegetation
Illinois Prairie	100 ft, with a few sections as close as 25 ft	Yes	Generally a 50 ft buffer zone of trees
La Crosse River	100 ft	Yes	Vegetation and grade separation
Libba Cotton	12 ft	No	N/A
Pedestrian Path	9 ft avg.	No	N/A
Rock Island	30 ft	Yes	Some grade separation
Rose Canyon	200 ft average, 100 ft at closest point	Yes	Vegetation and grade separation (10-20 ft)
Southwest Corr.	20-50 ft	Yes	Cement wall and chain link fence
Elk River	15-60 ft	Yes	Grade separation, 15-70 ft
Traction Line	18.5 ft min	Yes	Chain link fence
Waterfront	8 ft	Yes	Split rail fence
Zanesville	Varies between 15-70 ft	Yes	Chain link fence

Accidents

Trail Name	Any user/train accidents?	Describe	Any claims filed against your agency?
Celina/Coldwater	No	N/A	No
Duwamish	Not aware of any	N/A	No
Grandview/Sun	No	N/A	No
Green Bay	No	N/A	No
Heritage Trail	No	N/A	No
Illinois Prairie	Yes	Bicyclist injured; hit by train at street/RR grade x-ing	No
La Crosse River	No	N/A	Yes, livestock hit and killed by train
Libba Cotton	No	N/A	No
Pedestrian Path	No	N/A	No
Rock Island	No	N/A	No
Rose Canyon	Not aware of any	N/A	Not aware of any
Southwest Corr.	No	N/A	No
Elk River	No	N/A	No
Traction Line	No	N/A	No
Waterfront	Not aware of any	N/A	Not aware of any
Zanesville	No	N/A	No

NOTE:

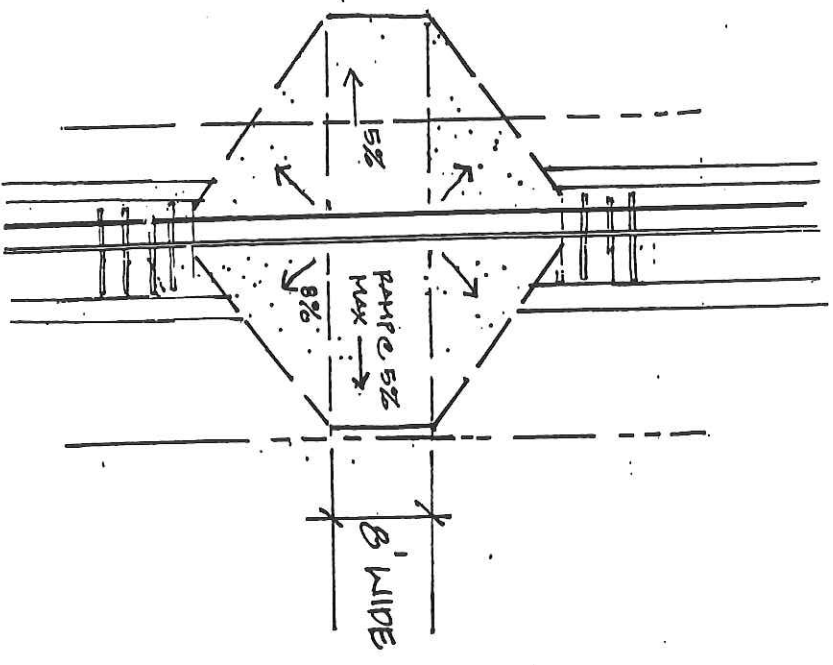
1. Zone designation A2 refers to the 100 yr. flooding. Elevations of possible flooding occurring at 10 feet above mean sea level. Existing top of sea wall elevation at 10 feet to 12 feet above mean sea level in the shaded area of the A2 zone. Cross examination of this area denotes sea wall as "flood control structure" for 100 year storms.
2. Railway placement as shown on map precedes FEMA flood management factors.



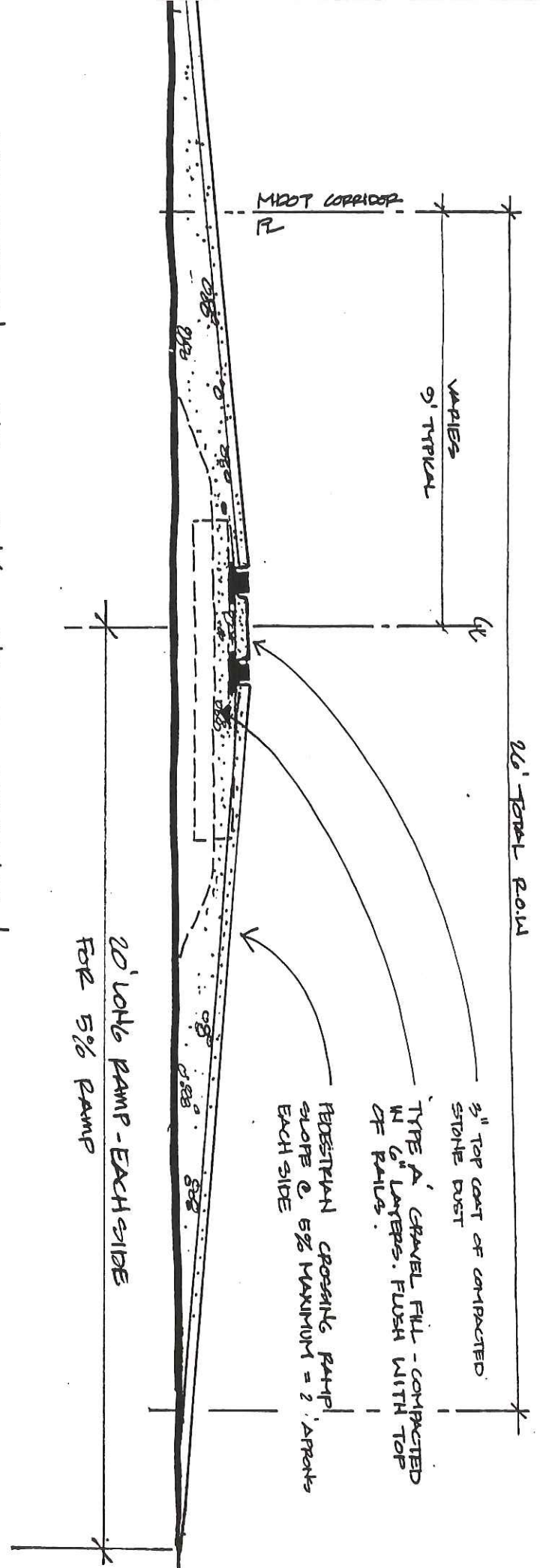
COASTAL BASE FLOOD ELEVATIONS
APPLY ONLY LANDWARD OF 0.0 NGVD

FEMA Floodway Map

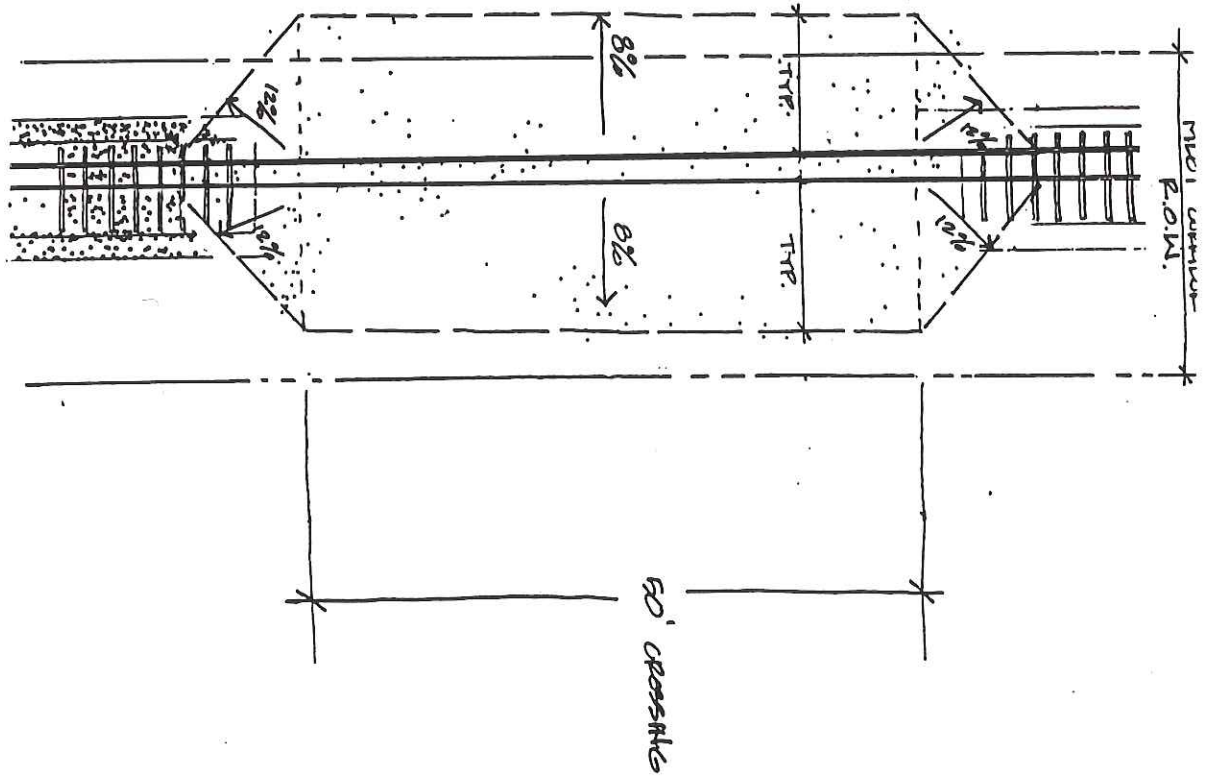
PEDESTRIAN CROSSING - 8' PLAN VIEW



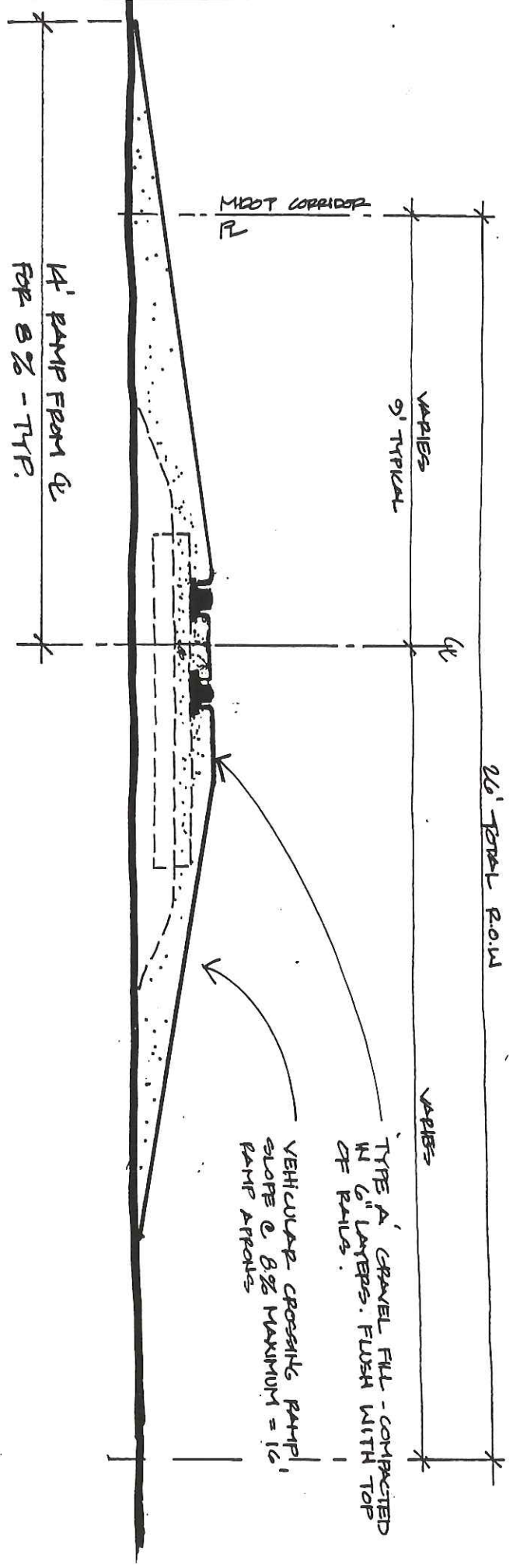
PEDESTRIAN CROSSING - CROSS SECTION

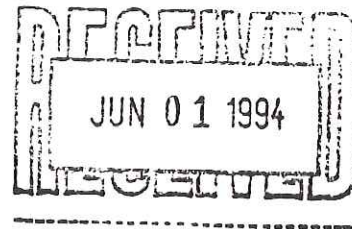


VEHICULAR CROSSINGS - 50' PLAN VIEW



VEHICULAR CROSSING - CROSS SECTION





Woodlot Alternatives, Inc.

Page 1 of 2

27 May 1994

Stephen B. Mohr
Mohr & Seredin
18 Pleasant Street
Portland, Maine 04101

RE: Narrow Gauge Railway, Portland, Maine

Dear Steve:

As requested, I surveyed the site of the proposed Narrow Gauge railway in Portland to determine if there was any high value wildlife or wetland habitat in the areas proposed for use. In short, the area I surveyed this morning is highly disturbed habitat that contains very little wildlife value. It is characteristic of an area that principally provides habitat for introduced wildlife species capable of tolerating high degrees of human disturbance (i.e. pigeons, starlings, house finches, English sparrows). The few "wetlands" that I observed on-site were man-made and not regulated by the Maine Department of Environmental Protection (DEP). Below I will briefly elaborate on my findings.

Wildlife Habitat

The Maine Natural Resources Protection Act (38 M.R.S.A. Sections 480) and the Site Location of Development Law (Chapter 371-379) regulate activities that may impact significant wildlife habitat or unusual natural areas. Significant wildlife habitats include habitats for state and federal endangered and threatened species, high and moderate value deer wintering areas and travel corridors, high and moderate value waterfowl and wading bird nesting and feeding habitat, some Atlantic sea-run salmon habitat, and some shorebird and seabird habitats. None of these features are known to occur on the Narrow Gauge Railway site. Furthermore, it is my opinion that none of these features occur on the highly disturbed site.

Wetlands

The U.S. Army Corps of Engineers (ACE) and the U.S. Environmental Protection Agency (EPA) regulate the disposal of dredged and fill material into wetlands of the United States under Section 404 of the Clean Water Act. Federal jurisdictional wetlands are "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

vegetation typically adapted for life in saturated soil conditions" (33 CFR Parts 320-330). Under the NRPA, the DEP regulates the following activities in, and near, jurisdictional wetlands and streams: a) dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials; b) draining or otherwise dewatering; c) filling; or d) any construction, repair or alteration of any permanent structure. DEP jurisdictional wetlands include all coastal wetlands and freshwater swamps, marshes, bogs and similar areas that are. a) Of 10 or more contiguous acres, or of less than 10 contiguous acres and adjacent to a surface water body, excluding any river stream, or brook such that in a natural state, the combined surface area is in excess of 10 acres; and ... b) inundated or saturated by surface or ground water at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils; and ... c) not considered part of a great pond, coastal wetland, river, stream, or brook.

The only wetlands that I observed on the site were man-made drainage ways that appear to have been created when the original railroad bed was constructed. The small wet pockets, typically only a few feet wide, were all much less than an acre in size, and therefore are not subject to regulation by the DEP. These areas would be regulated by the ACE, even though they appear to be man-made and are of limited functional value.

Summary

The area proposed for use as a Narrow Gauge railway does not contain any significant wildlife habitat, and is not acting as habitat for any particularly high value wildlife. Several very small, low value man-made wetlands occur in areas immediately adjacent to the old railroad bed. It appears as though the Narrow Gauge railway can be constructed without impacting these wetlands.

Should you have any questions, please call.

Respectfully,
Woodlot Alternatives, Inc.



John P. Lortie
Wildlife Biologist and Botanist

Attachments: Resume
Qualifications and Experience

RESUME

J. Emmons Lancaster, Jr.
666 Dutton Hill Road
P. O. Box 377
Gray, Maine 04039

Telephone: 207 657-3293

EDUCATION

CLARK SCHOOL, Hanover, NH - Graduated 1951

UNIVERSITY OF NEW HAMPSHIRE, B. S. in Civil Engineering 1955

OTHER EDUCATION (Workshops, Seminars, CED Courses)

NATIONAL HIGHWAY INSTITUTE - Fracture Critical Bridge Members - 1993
AMERICAN RY. ENGR. ASSOC. - Prep. of RR Bridges for 125 Ton Cars - 1993
UNIVERSITY OF WISCONSIN - Managing Track Maintenance - 1992
Bridge Inspection - 1987
GEORGE WASHINGTON UNIVERSITY - Bridge Inspection and Repair - 1983, 1991

WORKSHOPS

Rail Stress Analysis, Rail Failure Frequency Studies, Foundation Design, Use of Strain Gauges, Structural Steel Design, Boiler Operations and Energy Conservation, Watershed Control, Application of Federal Safety and Hazardous Materials Handling Regulations, Personal Injury and Incident Investigation.

American Railway Engineering Assoc. Technical Conferences - 1987, 1990, 1991, 1992, 1993.
Roadmasters' and Bridge and Building Assoc., Technical Conferences - 1990, 1991, 1992, 1993.

EXPERIENCE

CONSULTING ENGINEER - RAILWAY CIVIL/STRUCTURAL - 1970 to Present.

MAINE NARROW GAUGE RAILROAD COMPANY AND MUSEUM
Superintendent of Operations 1993 to Present

R. H. POTTER ASSOCIATES (Railway Civil Engineers)
Director and Associate - 1970 to Present

CONWAY SCENIC RAILROAD, INC.
Vice President, Engineering - 1968 to Present

ST. LAWRENCE & ATLANTIC RAILROAD CO.
Chief Engineer, 1989 to 1992.

GUILFORD TRANSPORTATION INDUSTRIES
Chief Engineer, Bridges and Buildings - 1989
Engineer, Bridges and Buildings, East - 1987 - 1989

BOSTON & MAINE RAILROAD:
Supervisor, Bridges and Buildings - 1984 - 1987

MAINE CENTRAL RAILROAD:

Assistant Engineer of Structures, Asst. Clearance Engineer 1974 - 1984
Supervisor, Bridges and Buildings - 1963 - 1974
Assistant Supervisor Bridges & Buildings - 1961 - 1963
Assistant Engineer (Jr. Engineer) - 1957 - 1961
Chainman, Rodman, Instrumentman - 1954 - 1957

NEW HAVEN RAILROAD

Chainman (School Vacation Position) 1952 - 1953

EDAVILLE RAILROAD

Passenger Trainman (School Vacation Position) 1949 - 1950

RESPONSIBILITIES

Primary responsibilities of above positions included design, rating, construction and repair of railroad bridges, culverts, buildings, trackage and pollution control facilities; supervision of maintenance of way and signal forces; supervision of track and signal inspection and construction; responsibility for compliance with and recordkeeping for Federal Railroad Administration and Maine, New Hampshire and Vermont Departments of Transportation track, signal and environmental requirements; cost estimating, scheduling, negotiation with contractors, bid supervision and purchase of materials for major construction projects; writing of rule books and timetables; instructing and supervising in the fields of railroad employee safety, train operations and track and bridge inspection; participation in permanent safety committees; assistance in development of management plans and start-up of new railroad operations; involvement in containment and cleanup of environmental incidents; appraisals of railway freight, passenger and maintenance equipment for railroads and museums; approved to perform insurance company safety inspections on Shortline and Tourist railroads.

PROFESSIONAL AFFILIATIONS:

American Society of Civil Engineers
American Railroad Engineers Association
Member of Shortline Committee
Chair of Sub Committee on track and bridge inspection recommendations.
American Railway Bridge & Building Association
Roadmasters and Maintenance of Way Association of America
New England Railroad Club
Operation Lifesaver (Highway-Rail Grade Crossing Safety Program)
Maine State Co-Coordinator - 1992 to Present
Tourist Railway Association, Inc. (T.R.A.I.N.)
Director - 1990 to Present
Chairman, Engineering Committee - 1985 to Present
Chairman, By-Laws Committee - 1991-1992

PROFESSIONAL LICENSES:

State of Maine, Professional Engineer #1729 - 1961 to Present
State of New Hampshire, Professional Engineer #3275 - 1970 to Present
State of Maine, Registered Land Surveyer #221 - 1968-1992
Commonwealth of Massachusetts, Construction Supervisor - 1986 to Present