
**PORTLAND
STREETCAR
OPERATIONS
PLAN**

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INTRODUCTION

This document represents the plan for operations and maintenance of the Portland Streetcar (streetcar). The document includes the system description, operations, maintenance, organization and operating costs. The City of Portland will be responsible for the operation. The City intends to contract with Tri-Met for operators and vehicle maintenance, use City Bureau's for right-of-way maintenance and contract with Portland Streetcar, Inc. (PSI) for administrative assistance.

This report is an update of the "Operating and Maintenance Alternatives – Central City Streetcar" prepared by LTK/Otak, version 2.0, May 1996 and the "Draft Portland Streetcar Operations Plan" dated June 2000.

System

N.W. 23rd, Northrup and Lovejoy, to Portland State University Urban Center. The 4.8-mile loop (2.4 miles in each direction) uses Lovejoy and 11th to PSU, returning via 10th and Northrup to N.W. 23rd. Streetcar tracks are located in lanes shared with auto traffic. Streetcars are governed by existing traffic lights at intersections, except at certain locations where there are train signals controlled by a train-to-wayside communications system (TWC). There are 32 car stops along the route.

Operation

Base service is proposed Monday through Thursday, 5:30 a.m. to 11:00 p.m.; Friday, 5:30 a.m. to 12:30 a.m.; Saturday, 8:00 a.m. to 12:30 a.m.; and Sunday, 8:00 a.m. to 10:00 p.m.

Frequency of Service

Weekdays

Basic (5:30 a.m. to 6:30 a.m.)	20 minutes
Peak Day (6:30 a.m. to 6:30 p.m.)	12 minutes
6:30 p.m. to 11:00 p.m.	15 minutes
<u>Friday Evening</u> 11:00 p.m. to 12:30 a.m.	20 minutes

Saturday

Basic (8:00 a.m. to 10:00 a.m.)	20 minutes
Peak Day (10 a.m. to 10 p.m.)	15 minutes
Basic (10 p.m. to 12:30 a.m.)	20 minutes

Sunday & Holidays

Basic (8:00 a.m. to 10:00 a.m.)	20 minutes
Peak Day (10:00 a.m. to 6:00 p.m.)	15 minutes
Basic (6:00 p.m. to 10:00 p.m.)	20 minutes

Running Time & Average Operating Speed

The average operating speed is estimated to be 7.9 miles per hour with a one-way running time of 18 minutes. Slower speeds (6.3 mph) may be experienced during peak traffic periods lengthening the

one-way running time to 23 minutes. During the afternoon peak period, Tri-Met's Route 15 bus takes 15 minutes to run from N.W. 23rd and Lovejoy to S.W. 5th and Morrison with an average running speed at the slowest time of 6.88 mph (see attached charts). Streetcar estimated travel times for the slowest period are based upon 6.3 mph or slower than current bus operations. Schedules are being projected with the conservative running times. These times are anticipated to be adjusted once actual experience when operation of the streetcars on the line can be achieved.

Fleet Size and Composition

Six (6) Inekon-Skoda Streetcars have been ordered. Two (2) Vintage Trolley cars are proposed to be transferred to the streetcar line for an operation yielding a total of eight (8) cars available for service.

Maintenance Concept

The streetcar maintenance facility is located at N.W. 15th/16th between Lovejoy and Northrup. The facility is capable of handling daily and periodic cleaning, inspection and light maintenance. It is intended to contract heavy maintenance to Tri-Met and private contractors.

Fare Structure

The City will issue fare instruments for the streetcar system that will be the equivalent of the 2-zone Tri-Met tickets. These streetcar fare instruments will be accepted by Tri-Met for use on its system; and Tri-Met's fare instruments will be accepted by the City for use on the streetcar system. The City, after consultation with Tri-Met, also may sell clearly identifiable streetcar-only promotional fare instruments, that will not be accepted by Tri-Met. The City will retain all revenue from the sale of streetcar fare instruments; and Tri-Met will retain all revenue from the sale Tri-Met fare instruments.

Organization

The City will contract with Tri-Met for Operators, Superintendents and Maintenance Technicians. The City will designate a Project Manager and hire a Manager of Transportation and a Manager of Maintenance. The City will contract with PSI for the provision of personnel to work under the direction of the City Project manager to assist in carrying out various administrative tasks.

Operating Costs

The annual budget for the full first year for the streetcar is \$2.4 million. It is estimated that "basic service" of 21,020 annual revenue hours can be provided at an average cost per revenue hour of \$115. It is anticipated that additional service over "basic service" could be provided at a marginal hourly cost of \$80 per hour for each hour over 21,020 annual hours.

SYSTEM DESCRIPTION

The streetcar is a conventional electric rail streetcar transit system approximately 2.4 miles in length. The initial segment is designed to accommodate an extension to RiverPlace and North Macadam. Other possible future destinations include Oregon Health Sciences University, Rose Quarter, Legacy-Emanuel Hospital and other eastside locations across the Broadway and/or Hawthorne Bridges.

Alignment

From N.W. 23rd, a single streetcar track would turn east on to N.W. Lovejoy, then south along 11th Avenue to S.W. Market Street, then east to S.W. 5th Avenue terminating at Montgomery. The return trip would travel diagonally through the PSU Urban Center to Mill Street at N.W. 6th and west to 10th Avenue, then north on 10th Avenue to N.W. Northrup then west to N.W. 23rd. A diagram of the route is provided as Figure 1 at the end of this section.

Streetcar tracks will be in street lanes shared with motor vehicles. Streetcars will pass through more than 34 cross-street intersections during each one-way trip. The streetcar will typically operate in the right hand travel lane (except for Mill and Market Streets) with parking preserved between the sidewalk and streetcar tracks.

Car Stops

The line will have simple car stops to receive and discharge passengers. Stops will be ramped to a raised curb from which convenient wheelchair access will be provided to the low-floor section of the vehicle across a bridge-plate at one of three doors on each side of the vehicle. The other two doors will have step access.

Car stops will be located at intervals of approximately 750 to 1,000 feet to provide ready access to many downtown origins and destinations. Stops are located at:

- N.W. 23rd Avenue
- N.W. Lovejoy/22nd, 21st, 18th, 13th
- N.W. Northrup/22nd, 21st, 18th, 14th
- N.W. 10th Avenue: Marshall, Johnson, Glisan, Everett and Couch
- N.W. 11th Avenue: Johnson, Glisan, Everett and Couch
- S.W. 10th Avenue: Stark, Alder, Yamhill, Jefferson and Clay
- S.W. 11th Avenue: Alder, Taylor, Jefferson and Clay
- S.W. Market Street: Park and 5th
- S.W. Mill Street: 6th and 9th
- S.W. 5th Avenue: Montgomery

It has been recommended that the streetcar experiment with “hail stops” where passengers can request the streetcar to stop at a sign without the curb extension. This experiment would require approval from the transit accessibility committee. Streetcars will operate on a stop “as-needed” basis for passengers, as is the case with buses.

Vehicles

Portland Streetcar has acquired six (6) Inekon-Skoda cars being manufactured in the Czech Republic. The cars have a low-floor section. They are 20.13 meters long (66 feet), which is between the size of MAX vehicle (95 feet) and a Tri-Met bus (40 feet). The car width is 2.46 meters which is 0.2 meters (8 inches) narrower than MAX vehicles. The cars have been manufactured previously for use in Europe. However, the European design has been modified to meet U.S. standards and expectations. The modifications to the specifications include: 1) cabs at both ends to allow reverse operations; 2) doors on both sides of the vehicles; 3) air conditioning; and 4) ADA requirements, including bridge plates and reserved space for passengers in wheel chairs and numerous other features. Figure 2 depicts the European design which is similar in appearance to the cars being manufactured for Portland.

Two (2) Vintage Trolleys (cars 513 and 514) will supplement service for the streetcar on the line and to provide special weekend service. The Vintage Trolley cars are being reviewed for possible modification. An operator and conductor will be required to operate the Vintage Trolley. Vintage Trolley will not be wheelchair accessible, which will limit its use on the line.

Four (4) diesel buses from Tri-Met are proposed to be acquired to provide for "bus bridge" service in the event of emergencies with operation of the streetcar. Operators for the streetcar will maintain proper certification and training for operating buses during the emergency.

Support Systems and Fixed Facilities

These system elements are required to support the operation of streetcars over the line. Included are the revenue service and non-revenue service tracks, traction electrification system, communications equipment, a maintenance and storage facility, fare collection, and security equipment.

1. **Revenue and Non-Revenue Trackage:** The main line will consist of a single track forming the loop described above which is the route for revenue service. Streetcars will operate with the flow of traffic. Non-revenue trackage is provided to enable dwell time for the operator, turnaround and access to the maintenance facility. A tail track will be provided on S.W. Montgomery between 4th and 5th Avenues. A turnaround and switch is located at S.W. 10th and Market. A switch is located at S.W. 10th and Morrison to enable connection to the MAX tracks. The only other non-revenue tracks are those connecting to the maintenance facility.
2. **Traction Electrification:** The traction electrification system (TES) includes three elements: six (6) substations that convert low voltage commercial AC to the nominal DC voltage required to operate the streetcars, overhead contact system (OCS) that provides the positive circuit to carry DC power from substations to the streetcars, and the running rails that act as the negative return circuit from streetcars back to the substations.
3. **Communications Equipment:** The communications equipment will consist of two categories, operator-to-controller and TWC. TWC will be on all cars and able to call traffic and train signals at N.W. Northrup and 23rd, N.W. Lovejoy and 23rd, S.W. Market and 11th, S.W. Market and 5th and S.W. Montgomery and 5th.

Communications between operators, and between operators and the control center at the maintenance facility will be provided by radios or cell phones or both. Provisions are being made on the vehicles for the installation of radios, which will operate on the City 800 MHz system. The fixed radios would be supplemented by hand held units for mobile operation. Another system being considered is the use of a combination cell phone/radio system such as what is offered by Nextel Communications. Reliability and cost will be addressed prior to the selection of the system.

TWC will be used for controlling right-of-way in situations where streetcar movements conflict with the normal operation of auto traffic and for the control of powered track switches. The TWC communications will be compatible with the system used on the MAX line, enabling streetcars and Vintage Trolleys to operate on the MAX line for occasional access to the Tri-Met's Ruby Junction maintenance facility and the Vintage Trolley facility on N.E. Holladay Street.

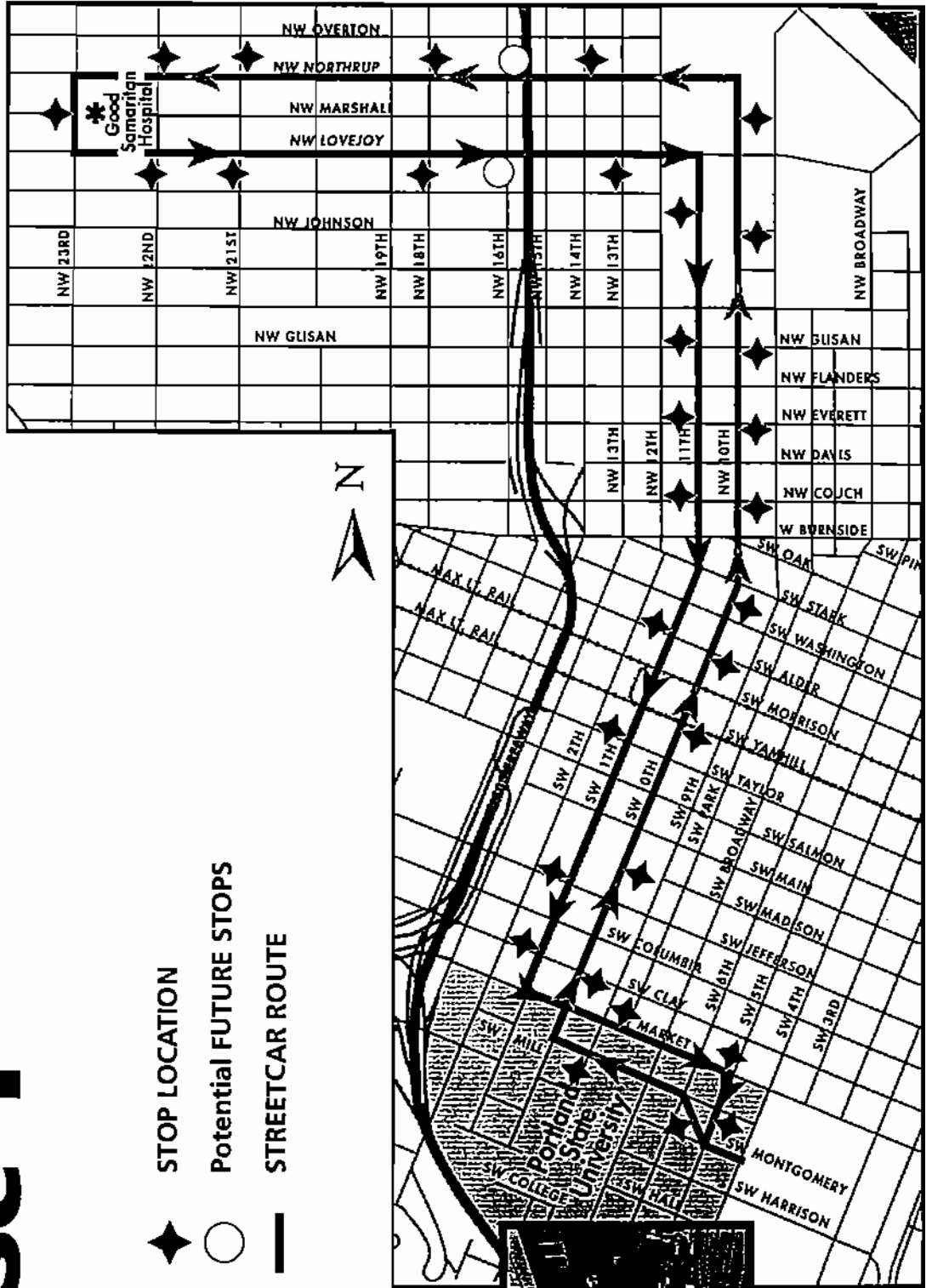
4. **Maintenance and Storage Facility:** A single shop and yard facility has been constructed. The location is between N.W. 15th and 16th and N.W. Lovejoy and Northrup under the I-405 Freeway. It is sized to house all of the vehicles required for streetcar operations on the current alignment. Vehicle maintenance capabilities include inspection, servicing and component replacement. Two tracks in the maintenance building are provided with room for one streetcar on each maintenance track. Track 1 does not enter the building and is used as a "run-around" and wash track. Track 2 enters the building and will be used primarily to lift the vehicle for removal of the trucks. Track 3 has a pit and roof access from the mezzanine to support preventive maintenance and general repair. Track 2 is proposed to be used to store Vintage Trolley cars. Illustrations of the maintenance facility are at the end of the Maintenance Requirements Section.

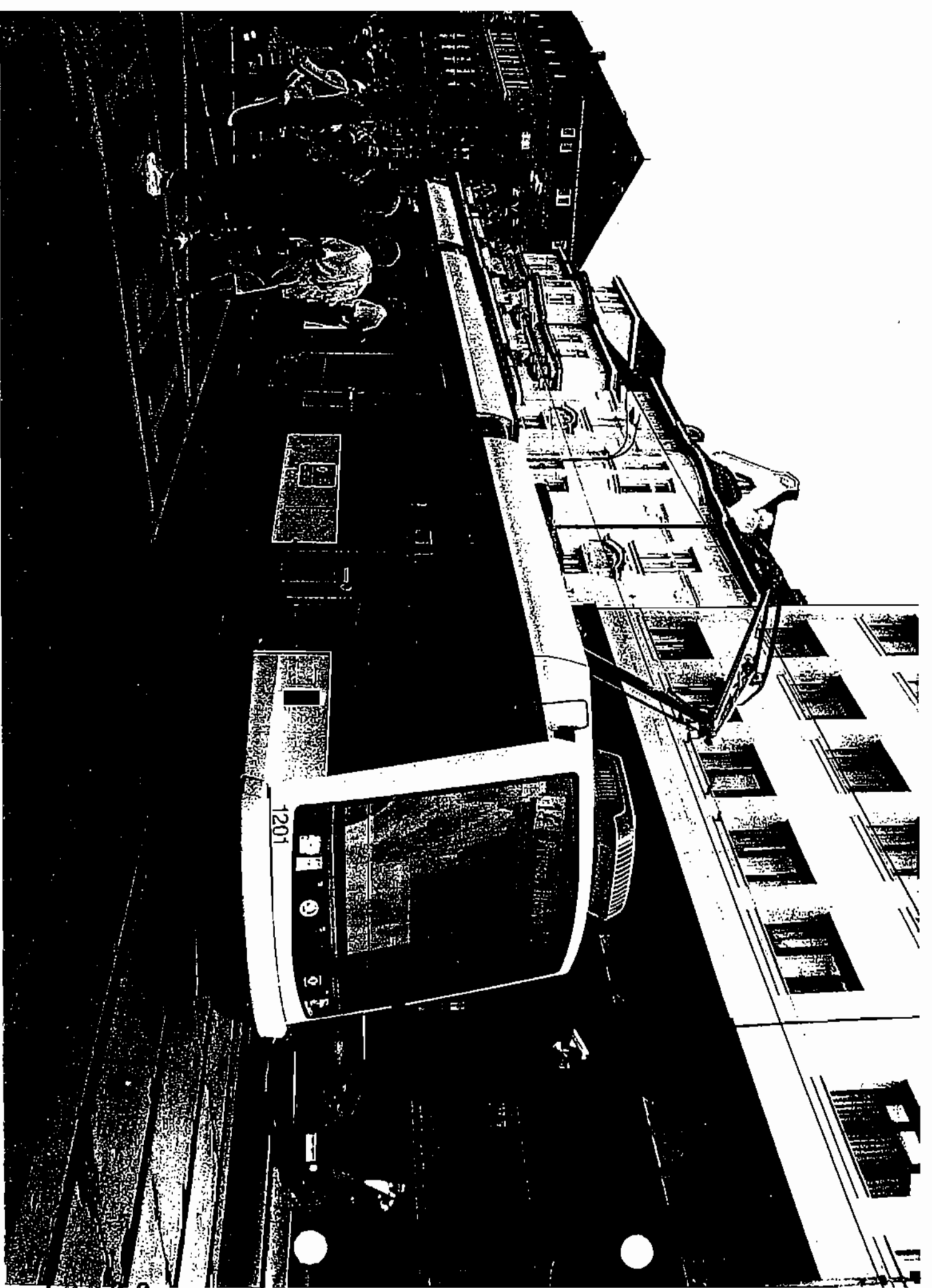
Control of Streetcar Operations

Streetcars will be manually controlled by human operators, like a bus or MAX train. Operators will operate by line of sight, keeping their vehicle speeds in check so as to be able to stop short of obstructions on the track ahead.

Streetcars will operate through intersections like other traffic and will be controlled by City traffic lights, signs and other devices. Preemptive signaling will occur at S.W. 11th and Market, S.W. 5th and Market and N.W. 23rd Avenue. An analysis is presently underway to consider possible signal improvements at other locations. Elsewhere the existing signal progressions will be maintained with streetcars moving with traffic, relatively unimpeded between car stops. Since the normal operating route will be a nearly continuous loop service without any merging or diverging sub-options, other than at the S.W. 5th and Montgomery tail track, switching will only be needed for abnormal or emergency movements. Control of streetcar movements through the grade crossings with MAX will be controlled by traffic and train signals under operating procedures developed with Tri-Met.

PORTLAND STREETCAR Phase 1





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OPERATING ASSUMPTIONS

The streetcar operating assumptions are as follows:

Hours of Service

Basic service is assumed to begin at 5:30 a.m. and end at 11:00 p.m., Monday through Thursday; 5:30 a.m. to 12:30 a.m., Friday; 8:00 a.m. to 12:30 a.m., Saturday; and 8:00 a.m. to 10:00 p.m., Sundays and holidays.

Service Policy

Service policy and frequency are important elements in the level of service. The shortness of the streetcar route, necessitates higher frequency of service to assure that passengers travel faster by streetcar than they could by walking. The service frequency goal is 10-minute frequencies with no longer than 12-minute frequencies during the weekday periods of 7:00 a.m. to 6:00 p.m.

Vehicle and System Capacity

Streetcars will transport seated and standing passengers. The Inekon-Skoda vehicles will accommodate 30-seated passengers, 2 passengers in wheelchairs, and 117 standing passengers for a total capacity of 149. The cars are 20.13 meters (66 feet) in length and 2.46 meters (8 feet) in width.

Vintage Trolley Operation

Weekend service is intended to include operation of the Vintage Trolley vehicles. Saturday operation would include both vehicles operating. One train would operate from 10:00 a.m. to 6:00 p.m. and the other would operate from 3:00 p.m. to 11:00 p.m. Sunday operation would include one vehicle operating from 10:00 a.m. to 6:00 p.m. Vehicles would be scheduled to operate between the Inekon-Skoda cars to provide the desired frequency of service. The Vintage Trolley cars are not accessible and will be identified as such on the schedule. The Vintage Trolley requires a conductor at the back of the vehicle. A contract with Vintage Trolley, Inc. is anticipated for the provision and coordination of the conductors. Streetcar Operators will be required to maintain training for operation of the Vintage Trolleys.

Emergency Operation

The operating system may incur periods of interruption of electrical service due to emergency conditions. Four (4) diesel buses are proposed to be acquired for use as an emergency "bus bridge" to assure continuous and reliable operation even during emergency periods. Streetcar Operators will be required maintain their certification for operating diesel buses in the designated emergency periods.

OPERATIONS ANALYSIS

Alternative streetcar operational strategies have been considered, and an analyses has been carried out to develop operating schedules, fleet sizes and operator requirements for weekday and weekend/holiday service.

Operating Issues and Assumptions

The initial operating strategy proposed for the streetcar assumes that frequent service will be provided, and that cars will stop at any boarding platform along the line on demand (i.e., when passengers wanting to board, are seen to be waiting on the platform and/or when a rider on board the car signals to alight). Several factors will influence service level, operating headways (intervals between streetcars) and quality:

- **Policy Headways:** Board directed maximum times between cars, perhaps differentiated by time of day and day of week.
- **Budget:** The number of vehicles that can operate as determined by the funds available for streetcar operations.
- **Fleet Size:** There will be six (6) Inekon-Skoda cars and two (2) Vintage Trolley cars available. At least one (1) Inekon-Skoda car and one (1) Vintage Trolley car should be held in reserve for emergencies and daytime maintenance and servicing. Accordingly, operations will be limited to no more than six (6) vehicles. Since Vintage Trolleys are not accessible to passengers in wheel chairs, only be five (5) cars will be available for reliable operates at any one time.
- **Vehicle Capacity:** The number of riders each streetcar can carry.

Placing Streetcars Into and Out of Service

All cars will be stored overnight at, and enter the system from, the maintenance facility located at N.W. 15th/16th and Lovejoy/Northrup. When streetcars are removed from revenue service, they will return from the end of the line stations to the maintenance facility.

Streetcar Crew Size

Each streetcar will be operated by one person. Each streetcar operator will be responsible for the safe movement of his or her vehicle. Vintage Trolleys requires a two-person crew (operator and conductor) with the conductor required to open and close the manually-operated doors at the rear of the car, unless there is a change from present Vintage Trolley operating policy.

One-Way Running Times

Operating times have been estimated using a computerized Train Performance Calculator (TPC) prepared by LTK, per their May 1996 document. This program was used in 1996 to estimate average speeds using characteristics describing light rail train passenger weight loads and route profiles: linear distance, grades and speed limits. Distances between car stops, grades and speed restricting curve locations for the entire alignment have been based on conceptual civil and profile drawings. The TPC estimated one-way running times in both directions between each car stop. The base case included run times from N.W. 23rd to PSU and S.W. Mill between 10th and 11th. The estimated run times and average speeds are included in Table 1.

Table 1. Alternative Estimates of One-Way Running Time

Alternative	Number of Car Stops	Avg. Stop Spacing	Average Speed	One-Way Run Time
Average delay of .50 min between each car stop	14	.16	6.3	22.9
Average delay of .25 min between each car stop	14	.16	7.9	18.2
With no traffic delay	14	.16	9.3	15.5

These findings are based on the following assumptions:

Rail Line Configuration: In each street, the streetcar track would be in a lane shared with motor vehicle traffic.

Speed Restrictions: For simulation modeling, City street speed limits of 25 mph used north of Burnside Street, with streetcars limited to 15 mph south Burnside in recognition of increased traffic congestion in the central business district. Lower speeds were assumed at sharp 90-degree curves in intersections.

Car Stops and Dwell Times: Dwell time at intermediate stops was estimated at 20 seconds for each stop north of Burnside and 30 seconds for each stop south of Burnside.

Tri-Met Bus Operating Speed

As a sensitivity analysis, Tri-Met's existing Route 15 bus performance was reviewed. It is scheduled to run from N.W. 23rd/Lovejoy to S.W. 5th/Salmon for a distance of 1.72 miles. The current schedule for operations was analyzed in terms of the average operating speeds. Travel times vary from 9 minutes (11.47 mph) to 15 minutes (6.88 mph) depending upon the traffic congestion on the street during different time periods. The bus operation is comparable to streetcar operation for the same area. The range of average speeds of 6.88 to 11.47 mph are greater than the results of LTK model conducted in 1996 which estimated streetcar average speeds from 6.3 to 9.3 mph. For the purposes of projecting operating speeds and schedules for the streetcar, the LTK projections are used. The Tri-Met bus experience indicates that the slower speed assumption is conservative and would be achievable by streetcar (see Table 2).

Table 2. Tri-Met Bus #15 (N.W. 23rd Avenue)

Weekday Time Period		Travel Time (minutes)	Speed (mph)
Start	End		
5:15 AM	6:18 AM	9	11.47
6:18 AM	6:44 AM	10	10.32
6:44 AM	7:15 AM	11	9.38
7:15 AM	1:15 PM	13	7.94
1:15 PM	5:24 PM	15	6.88
5:24 PM	5:33 PM	14	7.37
5:33 PM	8:14 PM	13	7.94
8:14 PM	8:30 PM	11	9.38
8:30 PM	11:28 PM	10	10.32
11:28 PM	12:28 AM	9	11.47

Terminal Times

Allowance is provided for layover time at the S.W. 4th and Montgomery tail track terminus for the purposes of operator rest and schedule recovery so that a late-arriving streetcar may start its run on time. There is no allowance for layover time at N.W. 23rd and Marshall.

Operator Variability

To allow for the sensitivity of the system's operation to variations in operator handling of the vehicle with respect to acceleration, maintaining maximum permissible speed and braking, each track segment's run time was rounded upward to the nearest half-minute.

Roundtrip Running Times

Roundtrip running times were estimated based upon the TPC which predicted average speeds for slow (6.3 mph), medium (7.9 mph) and fast (9.3 mph) conditions. Round trip times are estimated from N.W. 23rd and Marshall to S.W. 4th and Harrison rather than the initial south terminus at S.W. 10th and Mill, based upon preliminary commitments of the City to extend service to the PSU Urban Center. The slow time is 46 minutes, medium 37 minutes, and fast is 31 minutes. Layover time must be added to these round trip times. There is a more extensive discussion of service quality and frequency in the Service Frequency and Quality Section of this report.

Cycle times are set to allow for operator rest as well as to assure that the frequency of service is an even increment of an hour so that service would arrive at similar times each hour. It is anticipated that the streetcar will operate at different average speeds depending upon traffic congestion and the number of loadings. The early morning and late evenings are projected to have fast operating times while the afternoon peak hour is projected to have slow operating times.

The Service Frequencies set out in Table 3 (attached at end Service Frequency and Quality Section) are based on cycle times ranging from 40 minutes, 45 minutes and 48 minutes depending upon the number of cars in service and their operating speed. The slow speed of 6.3 mph would require 46 minutes to operate which is very close to the 48 cycle time required to meet 12 minute frequency for a 4-train operation. It is anticipated that the operator can achieve higher operating speeds during the

peak two-hour period, yielding adequate break time at the layover. For example, if the operator experiences the same speed as Tri-Met bus Route 15, the roundtrip time would be 42 minutes with a 6-minute layover at S.W. 4th and Montgomery. Service frequencies with this range of cycle times would yield 10-, 12-, 15- or 20-minute frequency service, depending on the number of cars in service.

MAINTENANCE REQUIREMENTS

Urban rail projects of all kinds typically result in placement of well-designed, attractive facilities out in the public domain, where they are subject to normal wear-and-tear and, unfortunately, occasional abuse. Defensive design and effective maintenance policies are ultimately just as important as functional design.

Maintenance Strategies

The City Manager of Maintenance will assign Tri-Met employees vehicle maintenance responsibilities in accordance with qualification, work rules and standard procedures. The City (through Tri-Met contract) will perform regular cleaning and servicing, periodic preventive maintenance inspections and change-outs of work components. Components will be sent to specialty facilities for heavy servicing (e.g., wheel sets to a shop with a wheel-truing machine) or repair and/or rebuilding (e.g., traction motors to heavy electric equipment repair contractor).

Generally, activities recommended to be performed in-house will share one or more of these characteristics:

- Safety-related function
- Periodic inspection
- Repetitive in nature
- Required as part of response to emergencies or service disruptions
- Economic favor in-house option

Activities for which use of outside contractors may be recommended are likely to include those that:

- Occur infrequently (or at least, less frequently)
- Need specialized personnel, procedures, and/or equipment
- Represent a large volume of work having a long maintenance cycle
- Economics favor contracting the work

Right-of-way maintenance will be substantially a City responsibility. Other bureaus or agencies will be contracted with when feasible (e.g., City for street repairs, car and stop cleaning, security, track, electrification, etc.)

1. **In-House Vehicle Maintenance:** The City will provide the necessary equipment to perform all vehicle maintenance activities related to the streetcars. Tri-Met personnel will be assigned, through a contract, vehicle maintenance.
2. **Right-of-Way Maintenance:** The City intends to contract with various City Bureaus to provide for right-of-way maintenance. Four areas of right-of-way maintenance and repair are subject to agreement with Tri-Met: powered switches, traction substation, rail signals and overhead wire. In these cases, the City will endeavor to utilize City Bureau employees where qualified and available. Tri-Met has agreed to offer contract services to the City, based upon the City's description of the work and responsibility. The City will provide consideration of

Tri-Met's proposed services before entering into a private contract for service. The City intends to contract for other services.

Vehicles, Support Systems, Fixed Facilities Maintenance Needs

All streetcar facilities and equipment will require ongoing servicing and maintenance. This section briefly describes the kinds of activities that will need to be accommodated:

1. **Streetcars:** Inspections and preventive maintenance of the streetcars will occur at regular intervals. Preventive maintenance is defined as those maintenance tasks performed to minimize the possibility of future equipment failure, reduce or minimize wear rates, replace consumable parts, and satisfy warranty requirements. A basic preventive maintenance program combined with rugged design of the cars will ensure high reliability and availability. Recommended levels of cleaning, inspection and preventive maintenance are:
 - **Daily Inspection and Service (after Revenue Operation):** Check safety-related systems, correct defects found and those reported by car operators, sweep interior, wash exterior and remove graffiti.
 - **30-day Preventive Maintenance:** Inspect for wear and damage: friction brake systems, resistors, lights, traction motors and auxiliary motors, brushes, pantograph shoes, control functions, door operator, liquid levels; perform lubrication; change filters; wash seats, windows and floors.
 - **90-day Preventive Maintenance:** Perform 30-day work; inspect, lubricate and adjust as appropriate: brake actuators, air or hydraulic valves, door mechanisms; inspect wheels for profile and wear.
 - **180-day Preventive Maintenance:** Perform 30- and 90-day work; inspect and adjust controls, brake resistors; inspect suspension; detail wash all interior surfaces, clean light fixture lenses or lamps, wash roof, clean underside of car.
 - **360-day Preventive Maintenance:** Perform 30-, 90-, and 180-day work; inspect and service: traction motor brushes, commutators, bearings, gearboxes (lubricate), truck/carbody connections and journal bearings.

Heavy overhaul-type work should be done approximately every fifth year, and will include: traction motors, gearboxes, control groups, trucks, door mechanisms, brake actuators, air compressor, and air comfort systems (if used). If spare units can be obtained, the streetcar shop will perform unit change-outs, with actual rebuilding done by contractors.

One or more car maintainers will be trained to trouble-shoot on-board fareboxes.

2. **Trackwork:** The track structure will be observed by the car operator as they traverse the line. Based on these inspections and good maintenance practices, the following work should be completed on a weekly basis:

- Correct defects found by inspections
- Adjust, repair and lubricate switches
- Clean flangeways, track drains and general track area as needed
- Replace failed rail bonds and rail connections
- Patch paving

If routine maintenance is performed faithfully, the track structure should not require replacement during the likely life of the project, except for high-wear curved rail and switch components.

3. **Traction Power:** The traction electrification system (TES) consists of three major sub-systems: power supply substations converting commercial AC to DC; the OCS composed of poles, wires and fittings; and the streetcar tracks, functioning as the return circuit.

- a. **Substation Inspections and Maintenance:** A visual inspection and general housekeeping of the substation(s), inside and outside, will be performed weekly. If an indication of a single diode failure or diode fuse opening per leg is noted, this will be scheduled for repair at a time when it is convenient to take the substation off-line. If more than one such failure or "open" exists, the substation will be immediately taken off-line and repaired. Causes of failures will always be investigated.

An annual functional check should be performed on all devices, switches and breakers. Electrical insulation tests will be made, the condition of the ground mat checked, and the unit thoroughly cleaned. Contact tips will be checked and dressed, or if necessary, replaced. Substation batteries will be checked, clean and serviced.

- b. **Overhead Line Inspection and Maintenance:** Car operators will visually recognize overhead line defects and improper power system operations, and should report these so corrective action can be taken. A thorough visual inspection will be made monthly by a maintainer.

The trolley wire generally should have a long life in the range of 50 years. Nonetheless, a detailed yearly inspection will be performed to include checking the integrity and tightness of all hardware and fittings, checking insulators mechanically and cleaning them as required, checking section insulators for damage, checking freedom of movement of bracket arm, and checking streetcar wire running surface condition, alignment and height. The electrical integrity of the overhead line insulation also will be tested annually.

After a major overhead line problem, such as a downed streetcar wire or a line pole damaged or moved by a collision, ingenuity and familiarity with general overhead design requirements will be needed to rig temporary overhead in order to permit resumption of streetcar operations until permanent repairs can be made. In such cases, the height and alignment of the streetcar wire beyond the immediate area of the problem will also be checked.

- c. **Return Circuit:** A weekly visual inspection of the return circuit will be carried out as part of the track inspection. This will include checking for frayed cables and broken connections to rails and special work. A detailed mechanical and electrical inspection will be performed yearly. Cable condition, bolted connection tightness, weld integrity and general electrical continuity will be checked.

In case of derailment, the integrity of the return circuit should be checked before resumption of streetcar operation.

- 4. **Car Stops:** Streetcar stopping places will be simple with standard shelters and few other associated furnishings. Services required should be minimal, and fall into two categories, custodial and repairs.
 - a. **Custodial Services:** Personnel involved in this function generally are concerned with keeping car stops clean and safe. They follow set routines and procedures, and respond to incidents when needed. Equipment and materials used may include sweepers, scrubbers, hand cleaning tools and specialized chemicals. The City intends to contract this service.

The following program is assumed in the development of contracting requirements for custodial service functions at streetcar stops:

- Each car stop is cleaned three times weekly.
- Cleaning includes platform sweeping, graffiti removal, garbage collection and replacement of consumables as required (e.g., light bulbs, if other than City streetlights).
- b. **Repair Services:** This category of car stop maintenance work is related to general facility repairs, primarily to the platform paving. These tasks typically require higher skill levels than custodial services. Since the number of car stops is small, facilities provided are simple; repairs will be needed only occasionally.

Maintenance Facility and Equipment Needs

The maintenance facility will store and service streetcars. It will accommodate the initial fleet, and is capable of housing cars added as extensions that are constructed later.

- 1. **Shop Building:** A 2-track shop has been built at N.W. Lovejoy and 15th under I-405. There is sufficient space to store one vehicle in the shop on each track. Work space on the shop floor should be as allocated as follows:
 - a. One car position with pit, for daily inspection and periodic servicing (for low-floor cars, these tracks also require catwalks, a method of providing maintenance staff access to equipment on the car roof).
 - b. One car position beneath a crane, for access to roof-mounted components (especially important for low-floor cars).

- c. One car position on a section of flat floor sufficient to support the operation of car-lifting jacks for changing trucks.
- d. Component repair and equipment areas for working on parts removed from streetcars.
- e. An enclosed area for various support facilities.

Attached at the end of this section are plans for the maintenance facility.

2. **Streetcar Storage Yard:** The storage yard provides for storage of up to 10-14 cars once the full use of the area is provided. The operation of Marshall as an auto traffic street limits the storage for the facility.
3. **Shop Tools and Equipment:** On the following page is a list of equipment being purchased for the facility. With a small initial fleet, it is not economically efficient to procure major pieces of vehicle maintenance equipment such as a wheel truing machine, wheel/axle press, automatic wash equipment, fixed jacks, etc. Wheel truing and pressing, and other similar major work should be contracted, at least during the first years of operation, or until the fleet grows to a size that will justify the capital costs. Car washing for a small fleet can be done by hand.
4. **Support Facilities:** Office space will be required for supervisors and administrative staff, as will staff restrooms, a storeroom for parts and tools, and areas for building mechanical and electrical equipment. An area of the maintenance facility will serve this function.

PORTLAND STREETCAR MAINTENANCE FACILITY

Maintenance & Office Equipment

Maintenance Equipment

- Bridge Crane
- Portable Jacks
- Shop Air Compressor
- Metal Muncher
- Grinder
- Drill Press
- Metal Lathe
- Special Mechanical Hand Tools
- Portable Power Tools
- Portable Lift Table
- Electric Welding Equipment
- Torch Welding Equipment
- Ladders and Step Stools
- Electrical / Electronic Test Equipment
- Mechanical Test Equipment
- Janitorial Equipment
- Two-way Radios
- Fork Lift (Hand)
- Fork Lift (Motorized for Trucks)

Office Equipment

- Storage Shelves
- Parts Drawers
- Metal Storage Rack
- Furniture
- Computers
- Refuse Containers

SERVICE FREQUENCY AND QUALITY

Operating Policies

The following policies have been used to develop service levels and costs:

1. **Service Reliability:** A priority will be that all scheduled trains will be dispatched as scheduled. This will require use of an on-call or stand-by system of operators in the event that an assigned operator is unable to work.
2. **Schedule Publishing:** The published schedules will display arrival/departure times when the frequency of service is greater than 10 minutes. These schedules will be displayed at all stops and in schedule pamphlets. If there is a time when service frequencies during all hours are 10 minutes or less, consideration will be given to not publishing a schedule.
3. **Budget:** The initial "basic service" is to be 21,020 revenue hours of service annually. This amount of service is projected to cost \$2.4 million per year.
4. **Base Service Frequencies:** Base service frequencies are subject to experience with travel time and operating costs:

<u>Time of Day</u>	<u>Base</u>
<i>Monday-Friday</i>	
12:30 a.m. to 5:30 a.m.	no service
5:30 a.m. to 6:30 a.m.	20
6:30 a.m. to 6:30 p.m.	12
6:30 p.m. to 11:00 p.m.	15
11:00 p.m. to 12:30 a.m.	20, Friday only
<i>Saturdays</i>	
12:30 a.m. to 8:00 a.m.	no service
8:00 a.m. to 10:00 a.m.	20
10:00 a.m. to 3:00 p.m.	15 (one VT car)
3:00 p.m. to 6:00 p.m.	15 (one VT car)
6:00 p.m. to 11:00 p.m.	15 (one VT car)
11:00 p.m. to 12:30 a.m.	20
<i>Sundays</i>	
12:30 a.m. to 8:00 a.m.	no service
8:00 a.m. to 10:00 a.m.	20
10:00 a.m. to 6:00 p.m.	15 (one VT car)
6:00 p.m. to 10:00 p.m.	20

5. **Priority for Allocation of Service:** Expansion of service and response to varying travel times are to be guided by the following priorities:
 - Assure minimum frequencies for all operating hours.
 - Assure weekday frequencies from 6:30 a.m. to 6:30 p.m. of 12 minutes.

- Assure weekday evening frequencies from 6:00 p.m. to 11:00 p.m. of 15 minutes.
 - Assure weekend frequencies from 6:00 p.m. to 11:00 p.m. of 15 minutes.
 - Assure weekday frequencies from 6:30 a.m. to 6:30 p.m. of 10 minutes.
6. **Fare Structure:** The Tri-Met fare policy shall be used as the fare system for the streetcar. All Tri-Met passes, transfers and tickets will be honored by the streetcar. Streetcar will sell 2-zone fares, Honored Citizen and Youth fares on the vehicle. Streetcar will request that Tri-Met honor tickets issued by streetcar. Fareless Square is proposed to be honored by streetcar with service free from N.W. Hoyt (10th & 11th) to PSU Urban Center. The City will give consideration to the development of a “streetcar only” pass that could be marketed in the district.

Operation Assumptions

Attached is Table 3 titled Service Frequency and Quality that estimates the level of service for the “basic service” of 21,020 revenue hours and for two other systems with 24,000 hours and 28,000 hours. The following were the assumptions:

1. **System:** The roundtrip is 4.8 miles from Northwest 23rd and Northrup to Southwest 5th and Montgomery. The original system roundtrip was 4.1 miles to 10th and Mill.
2. **Travel Time:** At 7.9 miles per hour, the roundtrip travel time is 36 minutes. The streetcar is likely to experience variability in this travel time depending upon the traffic level. Tri-Met has estimated travel time to be 50-54 minutes. The LTK travel estimate provided three potential speeds of fast (9.3), medium (7.9) and slow (6.3) which is being used to project travel times.
3. **Fleet Size:** Six (6) Inekon-Skoda cars, two (2) Vintage Trolley cars and four (4) diesel buses.
4. **Roundtrip Travel:** Estimated roundtrip travel time is projected to vary depending upon the level of travel. Table 3, Service Frequency and Quality contains estimated travel times for streetcar based upon various hours of the day. Early morning and late evening is estimated to require 31 minutes roundtrip. With a 9-minute layover, two trains could provide 20-minute frequency service. The peak travel (worst case) estimate is 46 minutes roundtrip yielding 12-minute frequency service with four trains operational with only a 2-minute layover break.

PORTLAND STREETCAR
Service Frequency and Quality
URBAN CENTER TO NORTHWEST

TABLE 3

Time of Operation Roundtrip Length	Avg. MPH 4.8	Daily Hours	Travel Time	21,000 Annual Hours			24,000 Annual Hours			28,000 Annual Hours					
				No. of Trains	Annual Hours	Cycle Time	Freq.	No. of Trains	Annual Hours	Cycle Time	Freq.	No. of Trains	Annual Hours	Cycle Time	Freq.
WEEKDAYS															
5:30 to 6:30 a.m.	9.3	1.0	30.97	2	522	40	20	2	522	40	20	3	783	45	15
6:30 a.m. to 3:00 p.m.	7.9	8.5	36.46	4	8,874	48	12	4	8,874	48	12	5	11,093	50	10
3:00 p.m. to 6:00 p.m.	6.3	3.0	45.71	4	3,132	48	12	5	3,915	50	10	5	3,915	50	10
6:00 p.m. to 11:00 p.m.	7.9	5.0	36.46	3	3,915	45	15	3	3,915	45	15	3	3,915	45	15
11:00 p.m. to 12:30 a.m.	9.3	1.5	30.97	2	157	40	20	2	783	40	20	3	1,175	45	15
					16,600				18,009				20,680		
SATURDAYS															
5:30 a.m. to 8:00 a.m.	9.3	2.5	30.97	0	0	40	0	2	260	40	20	3	390	45	15
8:00 a.m. to 10:00 a.m.	9.3	2.0	30.97	2	208	40	20	2	208	40	20	3	312	45	15
10:00 a.m. to 3:00 p.m.	7.9	5.0	36.46	3	780	45	15	3	780	45	15	4	1,040	48	12
3:00 p.m. to 6:00 p.m.	6.3	3.0	45.71	4	624	48	12	4	624	48	12	5	780	50	10
6:00 p.m. to 11:00 p.m.	7.9	5.0	36.46	3	780	45	15	3	780	45	15	4	1,040	48	12
11:00 p.m. to 12:30 a.m.	9.3	1.5	30.97	2	156	40	0	2	156	40	20	3	234	45	15
					2,548				2,808				3,796		
SUNDAYS															
5:30 a.m. to 8:00 a.m.	9.3	2.5	30.97	0	0	40	0	2	260	40	20	3	390	45	15
8:00 a.m. to 10:00 a.m.	9.3	2.0	30.97	2	208	40	20	2	208	40	20	3	312	45	15
10:00 a.m. to 3:00 p.m.	7.9	5.0	36.46	3	780	45	15	3	780	45	15	4	1,040	48	12
3:00 p.m. to 6:00 p.m.	7.9	3.0	36.46	3	468	45	15	4	624	48	12	5	780	50	10
6:00 p.m. to 10:00 p.m.	7.9	4.0	36.46	2	416	45	15	3	624	45	15	4	832	48	12
10:00 p.m. to 12:30 a.m.	9.3	2.5	30.97	0	0	40	0	2	260	40	20	3	390	45	15
					1,872				2,756				3,744		

	21,000	24,000	28,000
Total Revenue Hours	21,020	23,573	28,420
Estimated Cost	2,177,222	2,361,494	2,769,254
Contingency	250,000	250,000	250,000
Total Budget	2,427,222	2,631,494	3,019,254
Cost/Revenue Hour	115.47	111.63	106.24

OPERATING COSTS

Streetcar operating costs have been estimated for the “basic service” operation of 21,020 annual revenue hours (see Table 5). The total cost based upon service and staffing is \$2,400,000. Table 4, Operating Cost Projections lists a detailed budget estimate for “basic service” with projections through FY03 for operations.

The budget yields an estimate of \$115 per hour of operating cost for the base system. For purposes of estimating, the marginal cost for adding hours of revenue service is projected to be \$80 per hour for planning purposes since the supervision and administration are not anticipated to increase with additional service. The 24,000 hours of service are anticipated to cost \$240,000 more than the “Base” service and the 28,000 hours are projected to cost \$560,000 more than “Base”.

The following are assumptions for the cost elements:

Tri-Met Contract (estimated costs in Table 6)

1. **Board Expense:** PSI anticipates insurance and expenses.
2. **Superintendents:** Three (3) Superintendents at an cost of \$87,360 per employee.
3. **Operators:** 13 full-time Operators provided by Tri-Met with 10 scheduled runs. Tri-Met has an estimated hourly rate and the budget includes annual salary and benefit costs for highest paid Operator. Three (3) Operators will serve as relief for vacation and spare for daily operations.
4. **Mechanics:** Two (2) Tri-Met Maintenance Technicians are included for vehicle maintenance.
5. **Overtime:** Overtime pay estimate for holiday service and relief operations.
6. **Contract Service:** Contract service estimate.

Portland Streetcar, Inc. Contract

1. **Board Expense:** PSI anticipates insurance and expenses.
2. **Shiels Oblatz Johnsen (SOJ) Management:** Contract with SOJ for administration, public involvement and advertising is proposed at \$237,500 per year.
3. **Legal:** Legal Services provided by Chris Thomas at \$7,500 per year is anticipated.

City Expense

1. **Management:** General Manager, Manager of Transportation and Manager of Maintenance are proposed as City employees.

2. **Materials and Services:** Total cost for materials and services is \$300,000 and contracts at \$209,000 per year.

**PORTLAND STREETCAR
Operating Cost Projections**

REVENUE	99-01	00-01	01-02	02-03
Advertising		0	100,000	110,000
Farebox		0	100,000	103,000
City of Portland	200,000	400,000	600,000	657,440
Tri-Met		400,000	1,600,000	1,600,000
TOTAL REVENUE	200,000	800,000	2,400,000	2,470,440
EXPENSE		00-01	01-02	02-03
TRI-MET CONTRACT	FTE			
Superintendents	3	46,351	262,142	270,007
Operators	13	38,966	881,504	907,949
Maintenance Tech.	2	25,362	143,437	147,740
Overtime			20,000	20,000
Contract Work		20,000	30,000	30,000
Total Tri-Met Expense	18	0	130,679	1,337,083
PSI				
Board Expense		6,000	6,000	6,000
SOJ Management	112,345	317,000	248,850	248,850
Kittleson	10,000	0	0	0
Legal	35,000	2,500	7,500	7,500
Total PSI Expense	157,345	325,500	262,350	262,350
CITY EXPENSE	FTE			
Project Manager			35,000	36,050
Manager Operation	1	33,100	90,000	92,700
Manager Maint.	1	33,100	90,000	92,700
Personnel Expense	2	0	66,200	221,450
Propulsion		10,000	35,000	36,050
Materials & Services		30,000	40,000	41,200
Building Utilities		20,000	50,000	51,500
ODOT Lease	42,655	57,517	59,818	62,214
ODOT Fee		15,000	15,000	15,450
Insurance		25,000	75,000	75,000
Rail Materials			40,000	41,200
M&S Expense	42,655	157,517	314,818	322,614
BOM/MOW		10,000	65,000	66,950
Stop Cleaning			24,000	24,720
Security		10,000	30,000	30,900
VT Conductors			25,000	25,000
Promotion		50,000	30,000	30,000
Reserve for Repair			60,000	61,800
Contract Expense	0	70,000	234,000	239,370
Total City Expense	42,655	293,717	763,818	783,434
TOTAL	200,000	749,896	2,363,251	2,421,480
Contingency	0	50,104	36,749	48,960
TOTAL COST	200,000	800,000	2,400,000	2,470,440

PORTLAND STREETCAR, INC.
 Operating Projections
 21,020 Annual Revenue Hours

TABLE 5

	Mon	Tues	Wed	Thurs	Fri	Sat	Sunday	Hours/wk
Run 1	10	10	10	12				42
Run 2		10	10	10	12			42
Run 3			12	10	10	9		41
Run 4			8	8	10	9	8	43
Run 5	8	8			10	9	8	43
Run 6	10	8	8	8	Relief			34
Run 7	8	12	8			8	8	44
Run 8	8	8			10	9	8	43
Run 9	12	8	8	8	8			44
Run 10	8			8	8	8	8	40
Run 11	Vacation							40
Run 12	Relief	On-Call						40
Run 13	Relief	On-Call						40
Run 14								0
Run 15								0

10 hour shifts 2 2 2 2 4
 9 hour shifts
 8 hour shifts 4 4 4 4 2 2 5
 12 hour shifts 1 1 1 1 1

	Mon	Tues	Wed	Thurs	Fri	Sat	Sunday	Hours/wk
Sup 1 (Maint)	8	8	8	8	8			40
Sup 2		8	8	8	8	9		41
Sup 3	8	8	8	8			9	41
Sup 4	8	Relief			8	9	9	34
Sup 5	Vacation	on-call						0

**EXHIBIT C
TRI-MET PERSONNEL COSTS
ANNUAL BUDGET**

Tri-Met Labor	Tri-Met Hourly Cost	Annual Hours Paid	Annual Cost/Emp. 01-02
Operator	32.60	2,080	67,808
Maint Tech	34.48	2,080	71,718
Superintendent	42.00	2,080	87,360

TRI-MET CONTRACT	FTE	Cost/Emp	01-02
Superintendents	3	87,360	262,080
Operators	13	67,808	881,504
Maintenance Tech.	2	71,718	143,437
Total Tri-Met Expense	18		1,287,021

Based upon Tri-Met payment formula in Exhibit B.
 FY 01-02 costs for full time employees only.
 Overtime paid based upon City authorization.
 Cost adjusted annually based upon wage rates.
 Contract for Tri-Met MOW services and training not included.
 Maintenance of Way contract with Tri-Met may include:
 Traction Substations
 Overhead Wire
 Rail Signals
 Powered Switches
 Other Tri-Met costs subject to separate agreement.

ORGANIZATION AND LABOR AGREEMENT

The City will be responsible for the operation and the maintenance of the streetcar system. Staffing is intended to be primarily provided through an agreement with Tri-Met for the provision of Operators, Maintenance Technicians and Superintendents to supply the labor necessary for the operating commitments. These Tri-Met employees will be represented by the Amalgamated Transit Union and will work under City management.

The City will designate a General Manager, hire Managers of Transportation and Maintenance and contract with PSI for personnel to work under the direction of the City General Manager to assist the City with various administrative tasks.

The City will contract for services involving maintenance activities. The vehicle maintenance will be conducted through a contract with Tri-Met. The City intends to utilize City Bureaus for maintenance work other than the vehicles. Basic services are intended to be provided through an agreement with the Bureaus. Privately contracted services would be provided through the contracting procedures of the City. Tri-Met contracted services are anticipated for work outside of the vehicle maintenance assigned to Tri-Met personnel.

Maintenance-of-way services for powered switches, rail signals, overhead wire and traction substation will adhere to a special contracting procedure. Services by City employees will be determined first. Tri-Met will prepare a proposal for services based on the listed areas other than those provided directly by the City. The City agrees to contract with Tri-Met for the offered services if they meet the time and service level requested. All other services will be contracted under the City contracting procedures.

Labor Agreement Principals

The Amalgamated Transit Union represents Tri-Met employees and has worked cooperatively to develop an organizational structure that involves utilizing ATU/Tri-Met employees for operating and maintaining the streetcar. Labor Agreement principles have been prepared to guide the agreements required to implement this scenario.

Purpose: The purpose is to establish principles for the City of Portland to contract with Tri-Met for Superintendents, Operators and Maintenance Technicians under the Tri-Met Master Labor Agreement for regular daily operations of the streetcar. The proposed agreement can only be achieved by accomplishing the following:

1. The City would agree to contract with Tri-Met for Superintendents, Operators and Maintenance Technicians for the Streetcar.
2. ATU would agree to bargain work issues with Tri-Met to assure, among other things, that workers would report to the maintenance facility, work assignments would be modified to assure compatibility, uniforms would be provided for the streetcar, and training would be modified.

3. The City and Tri-Met would prepare an agreement for contracting that would assure PSI that they can meet the budget goal of \$2.4 million for annual operating costs.

Operating Organization: The City is the owner and operator of the properties and equipment.

The operation is planned to provide scheduled revenue service, every day, from a fleet of six (6) modern streetcars, four (4) diesel buses and two (2) Vintage Trolleys (to be transferred from Tri-Met to COP by 1/15/01), with a spare of two to three vehicles out of the total fleet of eight (8) during weekday 4-train operation from 6:30 a.m. to 6:30 p.m. The service hours for this operation, together with pull-out and pull-in requirements and vehicle maintenance logistics, means that operations and staffing will be continuous every day. Exact numbers of full-time employees required for regular day-to-day operations are to be finally determined, but are expected to be very close to the following:

<u>City</u>	<u>Tri-Met - 18 FTE</u>
General Manager	13 Operators
Manager of Transportation	3 Superintendents
Manager of Maintenance	2 Maintenance Technicians

Viability of the streetcar operation requires that its annual operating costs not exceed \$2.4 million in 2001 dollars. To fulfill the operating requirements within the allowable operating budget, the following principles must underlie establishment of the operating organization:

- Regular, full-time employees will be used only for routine, continuous, day-to-day functions.
- Contracted services will be used for maintenance or other functions which are performed outside the maintenance facility.
- As in any small transportation operation, there must be flexibility in work rules, to simplify logistics and minimize personnel required to accomplish the work.
- Employees will be expected to perform multiple tasks associated with assuring effective operation.

Note that certain "heavy maintenance" tasks for the streetcar vehicles (including the two transferred Vintage Trolleys) is intended to be performed by Tri-Met. This is because Tri-Met's light rail operation is the only source the streetcar vehicles can access for this specialized work. Other work will be contracted with the City or private contractors, including battery storage, body repair, stop cleaning and HVAC.

Tri-Met Key Principles – Master Labor Agreement

The ATU/Tri-Met Master Labor Agreement would allow Superintendents, Operators and Maintenance Technicians to be assigned to the City for providing operations and maintenance services. This would be accomplished through a side letter of agreement spelling out the details covering Tri-Met personnel doing City work.

The key provisions of the side letter would include:

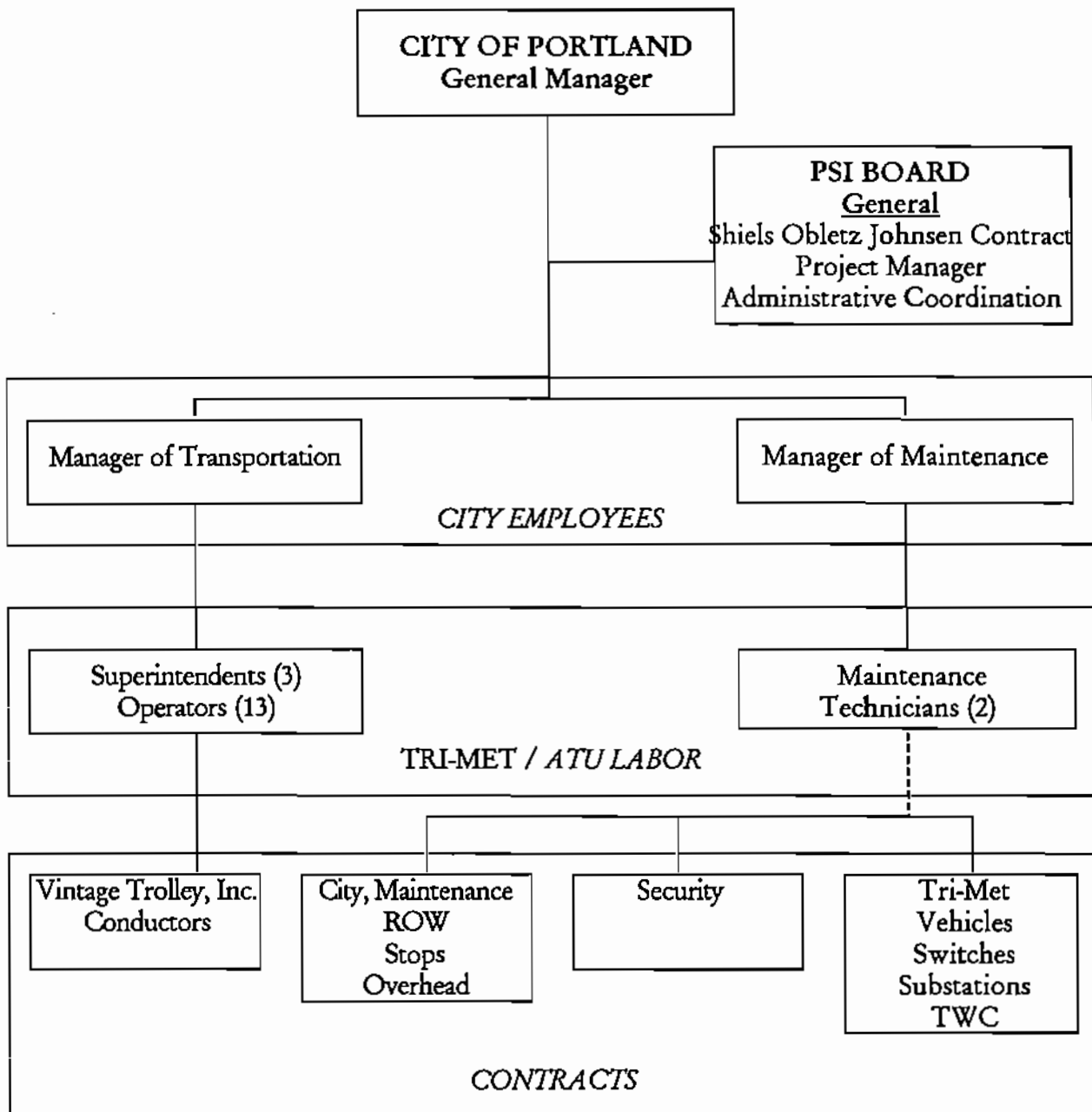
1. Full-time and Part-time Employees: Regular employees will be hired for routine, continuous day-to-day functions. Part-time Operators may be hired.
2. Superintendents: A new class of position called Superintendents would be established for the purpose of dispatch, control and emergency response and occasional operation. Three (3) positions are anticipated.
3. Streetcar Operators: A special classification of employee shall be established as Streetcar Operator to provide operating services for the City. It is agreed that the number of Streetcar Operators trained shall be established by the City with an estimate of 13.
4. Maintenance Technician: Two (2) Maintenance Technicians will be needed for vehicle maintenance.
5. Sign-ups: Operators will be provided the opportunity to sign-up for assignment to the City. Employees that sign-up for City work must commit to a minimum of one (1) year of assignment to the City.
6. Training: ATU and Tri-Met will establish a system for employees to sign-up for training as Streetcar Operators. The City would establish the maximum number to sign-up. .
7. Extra Board: Tri-Met's extra board system will not be used.
8. Supervision of Employees: Since on-site managerial supervision will not be possible for most shifts or operating hours, employees will be supervised in many cases by following instructions their Superintendent has left for them, by contacting their Superintendent when needed, and by occasional visits from their Superintendent. Operators will follow directions from the on-duty Superintendent.
9. Separate Labor Department: The Tri-Met employees working for the City will work as a separate department of Tri-Met employees (e.g., the "Streetcar" department).

City Key Principles – Master Labor Agreement

1. Filling of Positions: The ATU will establish and maintain seniority ranking for Streetcar employees. Employees may select run or shift work assignments in order of seniority at times agreed upon by Tri-Met and the ATU.

2. Superintendent: Superintendent work may include training of Operators and the work of each classification, including training of members of the same classification. Regular Superintendent work shall fulfill the dual functions of Controller (via radio) for the entire line, and field supervision of Operations, including incident response (i.e., one Superintendent job per shift, simultaneously covering both functions). Superintendent work may include revenue service operation of a Streetcar, if required due to absence of regular Operators. Superintendents shall have specializations in operations and maintenance while performing the assigned duties.
3. Work Rules: The City will develop an agreement on work rules for work signups, assignment of extra work, overtime, call-out, designated holidays, vacation and sick leave accrual and use, drug and alcohol testing, uniforms, etc., which are practical and efficient considering the small size of the streetcar operation and workforce.
4. Contracting: The City intends to contract for services in accordance with City contracting procedures. The City intends to contract with Tri-Met for services based upon specific agreement with Tri-Met for services that meet City needs for time and work defined. Special provisions are proposed for specific maintenance-of-way activities.
5. Maintenance-of-Way: Maintenance-of-way services for powered switches, rail signals, overhead wire and traction substation will adhere to a special contracting procedure. Services by City employees will be determined first. Tri-Met will prepare a proposal for services in the listed areas other than those proposed directly by the City. The City agrees to contract with Tri-Met for the offered services if they meet the time and service level requested. All other services will be contacted under the City contracting procedures.

Organization Chart



RESOLUTION No. 35957

Endorse the revised Portland Streetcar Operations Plan. (Resolution)

WHEREAS, Resolution No. 35900, dated July 12, 2000, endorsed the Draft Portland Streetcar Operations Plan; and

WHEREAS, Resolution No. 35900 also directed the Portland Office of Transportation (PDOT) to finalize agreements with the Tri-County Metropolitan Transportation District of Oregon (Tri-Met) needed to implement the operations plan; and

WHEREAS, PDOT and Tri-Met have agreed to the terms and conditions under which Tri-Met will provide funding assistance for the operation and maintenance of the Portland Streetcar system and will provide certain Tri-Met employees to work under City of Portland management for the operation and maintenance of the Portland Streetcar system; and

WHEREAS, a revised Portland Streetcar Operations Plan (Plan) reflective of the most current service and maintenance requirements, cost information and assumptions, and organizational structure has been prepared; and

WHEREAS, the revised Portland Streetcar Operations Plan is consistent with Resolution 00-12 passed by the Portland Streetcar, Inc. Board of Directors on November 7, 2000, recommending approval of the agreements with Tri-Met.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Portland, a municipal corporation of the State of Oregon, that the Council endorses the revised Portland Streetcar Operations Plan, substantially in accordance with the Plan attached as Exhibit A to the original of this Resolution, and by reference made a part hereof.

**Adopted by the Council,
JAN 10 2001**


Commissioner Charlie Hales
Vicky L. Diede:slg
January 3, 2001
grp@ac:\projects\61044\res-ord\opsplan-res.doc

GARY BLACKMER
AUDITOR OF THE CITY OF PORTLAND
BY 

DEPUTY

Title

Endorse the revised Portland Streetcar Operations Plan. (Resolution)

<p>INTRODUCED BY</p> <p>Commissioner Charlie Hales</p> <p>NOTED BY COMMISSIONER</p> <p>Affairs</p> <p>Finance and Administration</p> <p>Safety <i>Charlie Hales</i></p> <p>Utilities</p> <p>Works</p> <p align="center">BUREAU APPROVAL</p> <p>Bureau: Transportation Engineering & Development</p> <p>Prepared by Date Vicky L. Diede:slg January 3, 2001</p> <p>Budget Impact Review: <i>TN</i></p> <p><input checked="" type="checkbox"/> Completed <input type="checkbox"/> Not Required</p> <p>Bureau Head: <i>BW</i> Brant Williams, P.E.</p>	<p>Filed: JAN 05 2001</p> <p align="center">Gary Blackmer Auditor of the City of Portland</p> <p>By:  Deputy</p> <p>For Meeting of: _____</p> <p>ACTION TAKEN:</p>
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AGENDA	FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS:	
		YEAS	NAYS
Consent Regular <input checked="" type="checkbox"/>	Francesconi	Francesconi	✓
NOTED BY	Hales	Hales	✓
City Attorney	Saltzman	Saltzman	✓
City Auditor	Sten	Sten	_____
City Engineer: Brant Williams <i>BW</i>	Katz	Katz	✓
Approved By:			