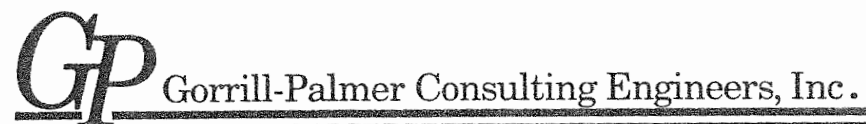


32-A/B



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July 21, 2005

Mr. Steve Landry
Maine Department of Transportation
16 State House Station
Augusta, ME 04333-0016

Subject: Portland Peninsula Plan
Response to Comments

Dear Steve:

Gorrill-Palmer Consulting Engineers, Inc. is providing you with comments from your August 11, 2004 letter regarding the second draft of the Portland Peninsula Plan. For ease of reference, each of your comments is placed below in italics (except for quoted items) followed by our response. Many of the responses were discussed at our meeting with you at the MaineDOT earlier this year as well as the Advisory Committee meeting in March. The City has worked closely with our office in preparing and reviewing the responses.

Comment 1: Page i-paragraph 4 Objective 1 "First, that this plan, as an outgrowth of a traffic study, is not a comprehensive transportation plan for the Peninsula". This report outlines a plan and recommendations for roadways and vehicle movement and should not be considered separately from broader transportation documents serving the City of Portland and the region". *How does this compare to Destination Tomorrow Objectives?*

Response: The draft Portland Peninsula Traffic Plan is consistent with the goals of Destination Tomorrow. The Preface statement that the Committee members want the Peninsula Traffic Plan to be implemented in a coordinated fashion with the recommendations of the Alternative Transportation Study is a very good example of consistency with the goals of Destination Tomorrow.

Comment 2: Same paragraph above - Who at MDOT is working on this Alternative Transportation Study?

Response: The Alternative Transportation Study has not yet been undertaken but is anticipated to begin in the coming months. However, a committee is to be formed as part of the study, and will include PACTS, Maine DOT Office of Passenger Transportation and the Bureau of Planning, and the City of Portland as active participants.

Comment 3: Objective 2 page i - paragraph 5 "This committee hopes that this study and report will provide a basis for looking at alternatives to "level of service" criteria at both the local

Mr. Steve Landry
July 21, 2005
Page 2 of 12

regulation level and at the regional funding level". *Why would you want to change national Engineering Principles and Standards?*

Response: The intent of the Plan is to recognize that within the constraints of an urban area, long-term development opportunities may often result in significant delay during peak hours of operation. While the goal of the Plan is to minimize these issues on the Peninsula where feasible and appropriate, requiring a level of service 'D' or better could result in long-term reductions in potential growth in downtown Portland which would be contrary to both the City and State policies to encourage growth in urban areas and minimize sprawl.

It should also be noted that Maine DOT rules allow for minimal levels of service within an urban compact area. To quote Maine DOT rules, "the required improvements are limited only to those necessary to mitigate the impacts of the project (which means the applicant is only responsible for returning all approaches to an intersection or piece of a roadway to the current Level of Service)." Based on these rules, areas with failing levels of service in the downtown area may continue to have such levels following additional development, so long as any specific development makes a reasonable effort to mitigate its traffic.

Comment 4: Guiding Principles and Objectives page v

- "Change the City Ordinance so that LOS criteria are not necessarily the driving force behind roadway improvement"
- "Traffic management techniques should be employed to AVOID CONGESTION AND MINIMIZE THE PHYSICAL AFFECTS OF INCREASED ROADWAY INFRASTRUCTURE and the loss of valuable land". *The S2 Plan and the two-way system for State and High Street increases congestion.*

Response: As discussed in the response to Comment 3, level of service may be deficient in portions of Portland's downtown during peak hours in the future. Roadway improvements, where possible, will need to strike a balance between preserving mobility and the needs of non-motorized travelers in the downtown area. In addition, while Alternative S-2 results in increased delay at some locations, in several locations an actual decrease in delay is realized as compared to the no-build alternative.

Comment 5: Page v "Maintain efficient traffic flow, acceptable LOS, and minimize air pollution". Plan S-2 violates this objective.

Response: Again, it is important to recognize that any transportation plan in a downtown area must balance the needs of motorists, pedestrians, and travelers on non-motorized vehicles while at the same time recognizing the limitations of a dense urban area. In the case of the Deering Oaks area, preservation of recreational space and recreation of the historic design on the park takes on a major role in the decisions driving roadway alignment.

Mr. Steve Landry
July 21, 2005
Page 3 of 12

Comment 6: Page v "Reduce the presence of HIGHWAY CORRIDOR THROUGH DEERING OAKS AND RESTORE STATE STREET AS A PARK ENTRANCE from Park Avenue". *The MDOT has invested hundreds of thousands of dollars into building and maintaining Route 77, how can Portland downgrade such a facility?*

Response: The I-295 Connector, on schedule to be completed next year, is expected to become a major route for traffic to and from the Casco Bay Bridge. The expectation is for a significant proportion of traffic currently utilizing State and High streets to shift to this new roadway. Maine DOT has been a partner in this process, and the City has appreciated its contributions to roadway's design and construction.

Comment 7: Page ix, "It is important to realize that these changes to State and High Streets result in the **loss of some on-street parking as well as operational efficiency at certain locations**. ...However, the potential benefits in terms of vehicular speed and accessibility improvements offset these losses". *Loss of on-street parking is a loss of accessibility. How does loss of operational efficiency translate into vehicular speed improvements?*

Response: These streets were historically two-way, and were converted to one-way largely to satisfy concerns about winter maintenance, as opposed to operational efficiency. The proposal will make the area more pedestrian friendly. A common concern with pedestrians in and around these streets is the vehicular speed. A multi-lane, unidirectional roadway tends to have higher vehicular speeds than two-lane bidirectional roadways due to perceived driver friction. The current situation with the one way pair has resulted in frequent speeding violations. Adherence to posted vehicle speeds also tend to result in a greater potential for vehicles stopping for pedestrians, where at higher speeds, stopping for pedestrians can result in the risk of rear-end collisions.

Comment 8: Page x, "All vehicles routed from I-295 south (with Destinations to Bayside west of Preble Street) will be signed to the Forest Ave Interchange. Vehicles would be directed to either Marginal Way or the proposed Somerset Street Extension". *This would introduce a similar situation at Franklin and Marginal (east) where vehicles block the mainline in order to turn left. Why would you want to introduce this? What would prevent vehicles destined further east of this area to use this way?*

Response: Wayfinding signage will only be targeted to vehicles where the western portions of Marginal Way and Somerset Street are appropriate destinations. Nothing would prevent vehicles from using the Franklin Street interchange if preferred by the motorist. This portion of Forest Avenue has had and will continue to experience capacity issues, and the signage will be designed to balance the need for preserving mobility while at the same time promoting connectivity.

Comment 9: Page 1-2 "The committee further recommends that two-way traffic be restored to both State and High Streets, for the critical purpose of reducing high-speed and cut-through traffic, renewing and preserving the residential and commercial areas currently isolated by these

Mr. Steve Landry
July 21, 2005
Page 4 of 12

streets, and broadening the alternative routes available to drivers whose destination is Portland itself". *How will this improve drivers destined for Portland itself?*

Response: The conversion of any two streets to a one-way pair limits accessibility to a certain extent by requiring a less direct route to their destination. For example, vehicles traveling to destinations on High Street, must first travel down State Street and cut through a neighborhood to reach their destination.

Comment 10: *Page 2-2 Land Use Policy* – “Adopt appropriate land use changes on streets chosen as high-volume preferred routes”. *What are these routes? Is that why Mercy Hospital has access to the new I-295 Connector?*

Response: Major routes through the Peninsula may benefit from zoning changes designed to promote long-term land uses compatible with a high-volume roadway. For example, long term zoning may de-emphasize residential use along High Street while encouraging it along State Street, which is forecast to have reduced volumes if converted to two way operation. Regarding the I-295 Connector and any other future major routes, with few exceptions (such as Mercy Hospital), access to these roadways is planned to be minimal to maximize vehicular mobility and encourage vehicular use.

Comment 11: *Page 3-3 Parking Policy* - “Periodic assessments of the urban density and parking supply should be undertaken to determine whether the evolving densities are sufficient to support a shift in investment strategy from parking and roadways to transit and alternative modes”. *Where is the City in taking an inventory of existing parking facilities, parking impact fees, and new parking facilities?*

Response: The City does have parking inventory information to determine overall parking supply and demand on the Peninsula. An examination of parking will continue to be of importance to the City, particularly in places where significant development is envisioned. Such areas include the eastern waterfront and Bayside areas. Additionally, the City may investigate the creation of a parking impact fee system to assist with the development and funding of appropriate parking facilities. These are issues which will be further evaluated in the alternative modes study recommended in this Plan.

Comment 12: *Page 4-1 How was the Origin-Destination survey conducted? How did you hand out the survey and how long did it take to receive them? What is the percentage return on the survey? Where is Appendix B that contains this information?*

Response: Please find a copy of the survey enclosed with this letter along with a description of how the survey was conducted. We mailed 9,000 surveys and received 1,310 useable responses for a response rate of 14.6%. Appendix B included with this letter is an expanded table of the through traffic percentages (an expansion of Tables 4.3 and 4.4)

Mr. Steve Landry
July 21, 2005
Page 5 of 12

Comment 13: *Page 4-5 Table 4.2 Vehicles that Pass Through the Peninsula: 1,013 or 6%. "Roughly half of the trips that pass through the Peninsula have one end of their trip located within the remainder of Portland (e.g. a trip between Woodfords Corner and South Portland). Therefore, the proportion of vehicles crossing the Portland Peninsula cordon that do not stop in Portland (e.g. trips between Yarmouth and South Portland) is roughly three percent". What is the Benefit / Cost ratio of redesigning Route 77 (S2) for roughly 500 vehicles?*

Response: While three percent of vehicles passing through the cordon (500 vehicles in a peak hour) are those that pass through all of Portland, six percent (1000 vehicles in a peak hour) are those that pass through the Peninsula, or downtown area. In addition, it should be noted that roadway designs are often placed in terms of daily trips. As a peak hour is typically in the range of ten percent of daily traffic, this translates to approximately ten thousand vehicles per day passing through the Peninsula. To place this in perspective, this is roughly equivalent to the total daily traffic of Congress Street near Pearl Street (based on MaineDOT 2003 counts.)

As previously stated, this is not the only consideration in making State Street two-way. Another important item of relevance is that Route 77 has bisected Deering Oaks, the preeminent park in Portland in such a way to leave the Rose Garden cut off from the remainder of the Park. The City feels that it is important to repair this portion of the Park in order to make the Park more historically accurate to its original design.

Comment 14: *"This through-traffic link to Forest Avenue represents 65 percent of all through-trips on Casco Bay Bridge (1,225 of the 1,893 total through-trips on Casco Bay Bridge". Why the doubling effect for through traffic and then adding AM and PM volumes together in Figure 4.2? On page 4-6 This makes it sound a lot worse than the 3% of through-traffic not destined in Portland.*

Response: The percentages on page 4-6 are referring only to the portion of the 6% thru traffic that passed through the peninsula on the Casco Bay Bridge. For example, 65% of the through traffic from the Casco Bay Bridge utilized Forest Avenue. The AM and PM were added together to summarize the two periods when data was collected.

Comment 15: *Chapter 5 is Traffic Forecasts - Why isn't there traffic volumes in the report? Chapter 5 should have figures. Why doesn't the report have maps of existing and future volumes as well as the Existing and Future LOS with the different options like Table 8.1 and Table 8.2?*

Response: Please find enclosed with this letter projected future traffic volumes based on the PACTS TRIPS model, much of which was previously sent to MaineDOT's Planning Division in April of 2002. Future traffic volumes were prepared in an Excel spreadsheet and can be incorporated into figures. Level of Service information can also be provided. However, as the Traffic Plan is a planning-level document, the focus of this Plan is on overall discussion as opposed to technical details.

Mr. Steve Landry
July 21, 2005
Page 6 of 12

Comment 16: *Where is the technical backup for the recommendations for Eastern Waterfront and Ocean Gateway?*

Response: Enclosed with this letter is the 2002 report for the Eastern Waterfront project. Also note that MaineDOT has a copy of the permit application, traffic impact study, and traffic movement permit on file for the Ocean Gateway portion of the eastern waterfront project.

Comment 17: *Figure 7.2 Concern with 3 outbound lanes past Marginal. Will the Interstate have capacity issues with this configuration and no improvements to outbound ramps and 2 through lanes on I-295?*

Response: One of the three lanes past Marginal is a lane dedicated to I-295 northbound and therefore ends before the bridge. The other two lanes are needed to accommodate the anticipated 20 year forecast with AMTRAK. The Maine DOT is conducting an I-95 corridor study, which includes this portion of I-295. The City of Portland has requested that MaineDOT make recommendations for this interchange in order to provide capacity for future volumes.

Comments 18: *Figure 7.2 Is the queue storage requirements for left turns into Fox adequate? They seem short in comparison to left turns into Marginal.*

Response: The queue storage for left turns onto Fox is adequate to accommodate the traffic forecast. Marginal Way at Franklin Arterial requires additional storage, as it bears the brunt of delays due to proposed AMTRAK service. It is critical that this portion of roadway provides as much storage as possible in order to minimize backups of traffic up and into the Peninsula. If Franklin Street Arterial is viewed by drivers as a chronically congested roadway, diversions to nearby residential areas may result.

Comment 19: *Page 7-6 "in order to preserve the left hand turn from Forest Ave onto Marginal Way, the Kennebec Street traffic would need to be re-directed....This recommendation is due in part to the need to make the proposed rail corridor work with the Forest Ave interchange and Marginal Way". The only vehicles that have access to Marginal Way from Forest Ave are those that are already on Forest Ave, those on the northbound off-ramp are not allowed to turn left onto Marginal. Opening up that option in the future would have the same effect as Franklin Arterial is today. Also, I don't recall that the relocation is needed to make the rail corridor to work for Marginal Way Interchange.*

Response: Please refer to an updated Figure 7.1, which shows a median that preserves the current prohibition of left turns to Marginal Way for traffic exiting the I-295 northbound off-ramp to Forest Avenue eastbound. With Somerset Street extended to Forest Avenue, this demand of vehicles to Bayside can now be accommodated with a new access, and vehicles will no longer have to head inbound all the way to Portland Street prior to turning left into the Bayside area.

Mr. Steve Landry
July 21, 2005
Page 7 of 12

Comment 20: Page 7-7 "All vehicles routed from I-295 south (with destinations to Bayside west of Preble Street) will be signed to the Forest Ave Interchange. Vehicles would be signed to either Marginal Way or the proposed Somerset Street Extension". *This will be complicated to sign.*

Response: Wayfinding signage will only be targeted to vehicles where the western portions of Marginal Way and Somerset Street are appropriate destinations. Nothing would prevent vehicles from using the Franklin Street interchange if preferred by the motorist. This portion of Forest Avenue has had and will continue to experience capacity issues, and the signage will be designed to balance the need for preserving mobility while at the same time promoting connectivity.

Comment 21: Page 8-4 "Prohibiting left-turn movements on westbound Park Ave at High St". *Figure S-2 shows lefts from Park Ave to High St.*

Response: Please refer to the revised Figure enclosed with this letter, which shows a prohibition of left turns on westbound Park Avenue at High Street.

Comment 22: Page 8-4 "Prohibiting left-turn movements on northbound High St at Park St". *Figure S-2 shows lefts from State to Park Ave. Alternative S-2 doesn't state that it will be closing off Forest Ave in front of Post Office.*

Response: Please refer to the revised Figure enclosed with this letter, which shows a prohibition of left turns on northbound High Street at Park Street. The text in the report will be revised such that it is clearly stated that Forest Avenue (adjacent to the Post Office) between the proposed Somerset Street Extension and Park Avenue will be modified and become part of a combined roadway segment with High and State Streets.

Comment 23: *How can having 5 travel lanes on High Street help pedestrian crossings? Crosswalks would be lengthened. Sidewalks would be encroached upon. Two-way traffic means more pedestrian/vehicle conflict points.*

Response: It is the desire of the City to de-emphasize the use of State Street as a roadway with heavy traffic usage and designate High Street as the facility that will carry the predominant cross-peninsula traffic flow. The need for five travel lanes on High Street is based upon aggressive traffic projections and incorporates little use of the proposed I-295 Connector. It is the City's hope that diversion to the I-295 Connector will be greater than that forecasted and therefore the need for future roadway capacity will be less.

Comment 24: *Why would you want to take a high efficient one-way and convert to two-way system?*

Response: As previously discussed in the responses to Comments 3 through 5, mobility in a mature urban area needs to strike a balance, striving to provide connectivity and usability to not only motorists, but pedestrians, bicyclists, and public transit users as well. While the

Mr. Steve Landry
July 21, 2005
Page 8 of 12

recommended alternative may not result in the greatest overall reduction in delay, it has the best overall benefit to all users, including those utilizing Deering Oaks.

Comment 25: Page 8-5 Add reduced pedestrian accessibility on High Street to all four alternatives.

Response: The final report will be modified to include discussions on pedestrian accessibility as criteria for consideration in the alternatives analysis.

*Comment 26: Page 8-5 "It is recommended that the S-2 alternative be considered for implementation because it meets many of the previously evaluated criteria. However, it should be noted that while S-2 is superior from an overall criteria perspective, **poor traffic flow is still identified as a concern.**" Why is this still being considered if it goes against a major objective?*

Response: While poor traffic flow is identified with this alternative, there are deficient areas with the system as it exists today (no-build option) as well as the other options examined. Given that the current design is forecast to operate with delay, but does not satisfy the desire to reunite portions of Deering Oaks, Alternative S-2 best strikes the desired balance between competing needs of operational efficiency for vehicles and the desire for green space enhancement.

Comment 27: Page 8-5 unable to find Figures 5 through 8 illustrating the alternatives for State and High Street.

Response: These Figures can be found in the Appendix of the draft final report.

Comment 28: Page 8-6 "Restricting movements from Forest Ave at Park Ave to right turns" for Options 3 and 4. If this is the case, would left-turn movements be allowed at Forest and Marginal?

Response: The left turns movements at Forest Avenue and Marginal Way would be prohibited under these Options, and would limit mobility to some extent. However, left turns would be allowed at the future Somerset Street, keeping diversions to a minimum.

Comment 29: Confusion on how to read Table 8.1. "...a No-Build option (no roadway changes), and for existing volume conditions assuming Alternative S-2 is implemented". The table is for future volumes (2025), why mention existing volumes. Why does the last column mention S-3? The four alternatives didn't mention S-3.

Response: The reference to existing volumes will be removed in the final report, as all alternatives refer to 2025 volumes.

Alternative 3 and Alternative 2 are similar in most respects. The only difference between the two alternatives is access to Deering Oaks. In Alternative S-2, access would be provided at the intersection of State Street and Park Avenue, while in Alternative S-3, access would be provided at the intersection of High Street and the proposed Somerset Street Extension. Alternative 3 will be discussed in more detail in a later revision of the Plan.

Mr. Steve Landry
July 21, 2005
Page 9 of 12

Comment 30: *The No-Build is better than all four alternatives with no construction cost, no removal of parking, no widening, no confusion of when parking is allowed, no additional air pollution, no geometric constraints and better pedestrian crossings (2 lanes instead of five and vehicles only travel from one direction). In Table 8.1 the only better LOS that occurred is at State and York, this is because those options include providing two approach travel lanes on westbound lanes at State Street.*

Response: Please refer to our responses to Comments 3, 4, 5 and 36. These alternatives seek to balance a number of competing needs.

Comment 31: *Again in Table 8.2 the No-Build is better in all six intersections except at High and Congress. The reason it is better is because Option 3 and Option 4 prohibit left turns from High Street onto Congress Street.*

Response: Please refer to our responses to Comments 3, 4, 5, 36 and 44.

Comment 32: *Not only is State and High Street LOS going to be worse by converting to two-way but what about the streets adjacent to them?*

Response: Please refer to our responses to Comments 3, 4, 5, 36, 44 and 45.

Comment 33: *Page 8-9. "High street is approximately 40 feet wide (between Danforth and York Street). With the need to provide four travel lanes near York Street..." What are the existing widths of roadways and how much widening of the roadways will be required to convert to two-way? What would the travel lane width be? Would sidewalks be sacrificed?*

Response: High Street is approximately 40 feet in width. Under the current plan, minor widening may be necessary to accommodate sufficient roadway width for four travel lanes. The specific dimensions of the roadway cross-section have not been identified, but lane widths would likely be approximately eleven feet and therefore could result in the widening of High Street by up to four feet. Accordingly, some impact to esplanade and sidewalk areas would be likely. Please refer to our response to Comment 23.

Comment 34: *Page 8-11. "When that project is complete (I-295 connector), a viable alternative to the State/High Street one-way pair will be in place. As indicated in Table 4 of Chapter 4, there is a pool of 924 AM and 969 PM peak hour trips that could potentially divert to the new connector". Did the future volumes from the PACTS Model for State and High Street include the new I-295 connector? From the PACTS Model what is the diversion of traffic because of the new Connector? What will be the travel time difference between the two routes?*

Response: The future volumes from the PACTS model for State and High Street included the new I-295 connector. There is no significant diversion of traffic in the model because of the new

Mr. Steve Landry
July 21, 2005
Page 10 of 12

connector. The model does not send any trips via the I-295 Connector that otherwise would be on State/High. The potential movements are discussed below:

- Traveling SB on I-295, headed to the Casco Bay Bridge -- The route to I-295 Connector is much longer than the current Forest Ave interchange to State/High path. Even when we slow State/High down significantly, the traffic doesn't divert to 295 Connector; rather, it uses Washington Avenue or Franklin Arterial.
- Traveling SB on Forest Avenue, headed to Casco Bay Bridge -- As was the case for SB 295 traffic, Forest Ave traffic will continue to use State/High because it is much shorter than the 295 Connector path. When State/High are slowed, we found traffic diverting either (1) to parallel local streets (e.g., Deering/Brackett, Preble) to bypass the problem intersections along State/High, but essentially cut across the Peninsula or (2) to St John St (which is still a shorter path than the 295 Connector).
- Traveling NB on I-295, headed to the Casco Bay Bridge -- The model has no traffic making this movement via State/High. All of this traffic exits instead at Veterans Bridge. The O-D Survey found a small number of motorists taking this path and, yes, if signed to take the I-295 Connector, they would take it.
- Traveling inbound on Congress Street, headed to Casco Bay Bridge -- Our survey found a relatively small number doing this as well and they do not currently use State/High.

Comment 35: Page 8-11. "An interim step if volumes have not dropped after the traffic patterns stabilize would be to consider **disrupting the progression along State and High to discourage their use by through traffic, thereby maximizing diversion to the I-295 connector**". *The Department of Transportation would not encourage such a strategy for it violates our policy on provide efficient and safe highways.*

Response: It is our understanding that in some urban locations, MaineDOT projects have created intersection treatments that, while improving safety and reducing driver confusion, still result in delay. Furthermore, the I-295 Connector provides a viable alternative to these streets, and so encouraging its use would be a prudent measure, given the cost of this project.

Comment 36: The report never gives a recommendation to which of the four alternatives they would recommend.

Response: The final report will clearly state that Alternative S-2 is the recommended alternative based on the criteria set out in the evaluation matrix. The second paragraph on page 8-11 presents a recommended course of action for furthering the evaluation of this Alternative following the completion of the I-295 connector. The report goes on to pose a series of policy questions in bullets. The first two questions are for the City, which will be addressed upon official adoption of the Plan. The remaining two questions involve Maine DOT, and have yet to receive a formal response.

Mr. Steve Landry
July 21, 2005
Page 11 of 12

Comment 37: *Page 8-11.* "The majority of the alternatives failed after evaluation except for alternatives S-2 and S-3. These alternatives are FEASIBLE but compromise mobility to a certain extent in favor of other policy objectives which raises a number of policy issues which need to be considered by the City in determining a course of action:". *Has a Feasibility Study been done?*

Response: The Plan has undertaken preliminary feasibility, as far as forecasting future volumes and providing analysis and reviewing geometric improvements, such as turning radii modifications, which would need to be made. A more detailed feasibility study prior to implementation to any changes to State and High Streets is recommended.

Comment 38: *The report ask several questions:*

- "What is level of delay to motorists is appropriate to this area? Traditionally the City has required a LOS no less that a "D" at signalized intersections.
- Is the City willing to implement these improvements if they will reduce the level of service?
- Would the project be eligible for PACTS and or the Maine DOT cost sharing if the level of service is not enhanced?
- Would the Maine DOT allow alternatives S-2 or S-3 even if they were not funding the project? Their approval would be required since State and High are designated as STATE ROUTE 77."

Is the City going to answer these questions or take a stand on these issues?

Response: The City intent through the course of creating this Plan was to involve both PACTS and the Maine DOT in the process and enter into a dialogue on these issues. As discussed in the response to Comment 36, the City will address the first two questions upon adoption of the Plan, and has held three neighborhood meetings on the Plan to assist answering these questions. However, it is anticipated that the City will support the goals of the Plan, and as such, will revisit its criteria for level of service (LOS). Questions 3 and 4 are questions to be answered by the Maine DOT and we would welcome further discussions with you on these policy issues.

Comment 39: *A total costs for all improvements for immediate, short term and long terms is \$415,000, \$13,499,000 and \$37,000,000 respectively. What is the implementation plan?*

Response: The schedule of the roadway improvements will be incorporated into the final version of the report.

Comment 40: *The diversity of traffic initiatives addressed by this study lends themselves to a similar diversity of levels of NEPA studies and/or documents, many of them being Categorical Exclusions. A potential option of this traffic study, combined with appropriate environmental and planning data, would be to pursue a "checklist" Environmental Assessment or Categorical Exclusion form of documentation that would address the cumulative and secondary impacts of these proposed traffic improvement strategies and serve as a comprehensive, efficient mechanism for NEPA compliance.*

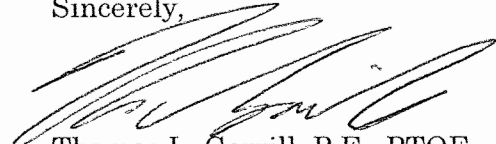
Mr. Steve Landry
July 21, 2005
Page 12 of 12

Response: Any major roadway improvements or changes will be examined individually to determine what level of NEPA, if any, is applicable.

Comment 41: It is important to note that the context of this report is a traffic study, therefore, only a portion of a larger overall feasibility/planning process that is subject numerous State and Federal laws, such as the National Environmental Policy Act (NEPA). The reader needs to be mindful that this study does not address the broader "umbrella" of NEPA-related environmental issues, such as the Air Quality Conformity analysis requirements of the Clean Air Act, the cultural resource protections of Section 4(f), and the results of a community impact assessment, to name a few.

Response: Please refer to our response to Comment 54. No improvement will be undertaken prior to ascertaining whether or not a NEPA or other review/permitting process is required.

Sincerely,



Thomas L. Gorrill, P.E., PTOE
President

Enclosure

Copy: Dennis Emidy, MaineDOT Bureau of Planning
Bill Needelman, City of Portland
Kathy Earley, City of Portland
John Duncan, PACTS
Jim Cloutier, Chairman
Alex Jaegerman, City of Portland
Ed Hanscom, MaineDOT

Attachments

Peninsula Motorist Survey
Origin-Destination Survey Results
Portland Peninsula Forecasts
Ocean Gateway/Eastern Waterfront
Assessment

PORTLAND PENINSULA MOTORIST SURVEY

A vehicle registered in your name was observed entering or leaving the Portland Peninsula at the location shown on the reverse side of this survey on Wednesday, March 28. Please complete this survey about your morning and afternoon trips that day. If you do not recall the exact nature of your trips that day, provide the information for the last day you traveled into, from, or through the Peninsula.

Mail the survey in the postage-prepaid envelope as soon as possible. If you have any questions regarding the survey or about the study in general, please call Rita Mooney at Greater Portland Council of Governments at 774-9891. If you prefer, you may submit the survey electronically at the website portlandpeninsulastudy.com.

Circle the one statement that best describes your trip **between 7 and 9 that morning**. Please provide the requested information for that statement. If you took more than one trip, describe your first trip.

<i>I drove into and parked on the Portland Peninsula.</i>	<i>I drove into and through the Portland Peninsula.</i>	<i>I drove out of the Portland Peninsula.</i>	<i>I did not drive on the Portland Peninsula that morning.</i>
1. My trip that morning began where?	1. My trip that morning began where?	1. Mark an 'X' where my vehicle was parked that morning.	<i>Answer the 'afternoon' questions below.</i>
City/town	City/town	2. Draw the route taken on the map on the reverse side of this survey and mark as 'AM'	
Street or place name	Street or place name	3. My final destination that morning?	
2. Draw the route taken on the map on the reverse side of this survey and mark as 'AM'	2. Draw the route taken on the map on the reverse side of this survey and mark the route as 'AM'	City/town	
3. Mark an 'X' where I parked that morning or name the garage or lot	3. My final destination that morning?	Street or place name	
	City/town		
	Street or place name		

Circle the one statement that best describes your trip **between 4 and 6 that afternoon**. Please provide the requested information for that statement. If you took more than one trip, describe your first trip.

<i>I drove into and parked on the Portland Peninsula.</i>	<i>I drove into and through the Portland Peninsula.</i>	<i>I drove out of the Portland Peninsula.</i>	<i>I did not drive on the Portland Peninsula that afternoon.</i>
1. My trip that afternoon began where?	1. My trip that afternoon began where?	1. Mark an 'X' where my vehicle was parked that afternoon.	<i>I did not drive on the Portland Peninsula that afternoon.</i>
City/town	City/town	2. Draw the route taken on the map on the reverse side of this survey and mark as 'PM'	
Street or place name	Street or place name	3. My final destination that afternoon?	
2. Draw the route taken on the map on the reverse side of this survey and mark as 'PM'	2. Draw the route taken on the map on the reverse side of this survey and mark the route as 'PM'	City/town	
3. Mark an 'X' where I parked that afternoon or name the garage or lot	3. My final destination that afternoon?	Street or place name	
	City/town		
	Street or place name		

We appreciate your assistance. If you wish to identify current transportation problems on the Peninsula or if you have any suggestions for improvements, please list them below.

Portland Peninsula Traffic Study
Motorist Origin-Destination Survey Results
Prepared by Kevin Hooper Associates
June 2003

An origin-destination survey was conducted of motorists entering and leaving the Portland Peninsula. The purpose of the survey was to supplement current understanding of travel patterns to, from and through the Peninsula. This report summarizes key findings from the survey effort. The actual data set is housed at PACTS and will enable more detailed analysis if desired.

A mailback survey instrument was mailed to motorists who had been observed either entering or departing the Peninsula. Information was collected on their trip origin and destination and the route taken on the Peninsula. Additional detail on the data collection methodology and data analysis is provided in Appendix A.

The ten Portland Peninsula cordon locations are illustrated in Figure 1 in Chapter 4 and are defined as follows:

- Washington Avenue at its interchange with I-295
- Franklin Arterial at its interchange with I-295
- Preble Street Extension, north of Marginal Way
- Forest Avenue, north of Marginal Way
- Deering Avenue, north of Park Avenue
- St. John Street, north of Park Avenue
- Park Avenue, west of St. John Street
- Congress Street, west of St. John Street
- Veterans Bridge
- Casco Bay Bridge

This report answers the following questions:

General Composition of Traffic at Portland Peninsula Cordon

- what is the distribution of traffic at the Portland Peninsula portals?
- who drives to, from or through the Peninsula during the morning and evening peak hours?
- does the proportion of through-trips and local-trips vary by portal?

Characteristics of Traffic Traveling Through the Peninsula

- what are the primary through-traffic movements on the Peninsula?
- where are the through-trips coming from and going to?

Characteristics of Traffic Headed To or From the Peninsula

- where do motorists destined to the Peninsula come from?
- where do trips destined to the Peninsula enter the Peninsula?
- does the destination distribution vary according to trip origin location on the Peninsula?
- are there additional potential uses of the origin-destination survey data?

What is the distribution of traffic at the Portland Peninsula portals?

Table 1 lists AM and PM peak hour volumes for each of the ten portals. During the morning peak hour, a total of 17,043 vehicles cross the Portland Peninsula cordon. During the evening peak hour, this total increases to 20,654.

In the morning, the two portals with the largest traffic volumes are Forest Avenue and the Casco Bay Bridge (each with roughly 19% of the cordon volume). Veterans Bridge, Franklin Arterial, and Congress/Park are next in line in terms of traffic volume (each with roughly 13%). In descending order of traffic volume, the other four cordon points are Preble Street, Washington Avenue, Deering Avenue and St. John Street.

In the evening, the portal with the highest volume is again Forest Avenue (19% of total cordon volume). However, in contrast with morning peak hour, the Congress/Park portal moves up to the second highest volume (18%), followed by Casco Bay Bridge (17%), Franklin Arterial (14%), and Veterans Bridge (11%). The lowest four remain Preble Street, St. John Street, Washington Avenue, and Deering Avenue.

Table 1. AM and PM Peak Hour volumes at Peninsula Cordon

	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Washington Avenue	798	339	1,137	324	602	926
Franklin Arterial	1,569	619	2,188	925	2,009	2,934
Preble Street	1,149	383	1,532	541	1,124	1,665
Forest Avenue	1,918	1,314	3,232	1,708	2,188	3,896
Deering Avenue	449	345	794	340	522	862
St. John Street	344	281	625	473	586	1,059
Park Avenue	0	765	765	0	2,164	2,164
Congress Street	1,374	0	1,374	1,503	0	1,503
Veterans Bridge	1,581	654	2,235	926	1,287	2,213
Casco Bay Bridge	2,074	1,087	3,161	1,262	2,170	3,432
TOTAL	11,256	5,787	17,043	8,002	12,652	20,654

Who drives to, from or through the Peninsula during the morning and evening peak hours?

As shown in Table 2, a total of 16,030 vehicles enter, exit, or pass through the Portland Peninsula during the morning peak hour. Of that total, 64 percent are vehicles entering the Peninsula with a destination on the Peninsula. Another 30 percent of the morning cordon traffic represents vehicles that exit the Peninsula after beginning the trip on the Peninsula. Finally, six percent of the vehicles crossing the cordon during the morning peak hour pass through the Peninsula without making a stop.

During the evening peak hour, the through-traffic proportion remains at six percent of the total number of vehicles at the Peninsula cordon.

Shown later in this document are the communities in which these through-trips start and end. But, because it helps the understanding of through-trips, this anecdote is offered here: roughly half of the trips that pass through the Peninsula have one end of their trip located within the remainder of Portland (e.g., a trip between Woodfords Corner and South Portland). Therefore, the proportion of vehicles crossing the Portland Peninsula cordon that do not stop in Portland (e.g., trips between Yarmouth and South Portland) is roughly three percent.

Table 2. Trip Types at Portland Peninsula Cordon

	AM Peak Hour	PM Peak Hour
Vehicles that Enter the Peninsula with a Destination on the Peninsula	10,243 (64 %)	6,920 (35%)
Vehicles that Begin a Trip on the Peninsula and Exit the Peninsula	4,774 (30%)	11,570 (59%)
Vehicles that Pass Through the Peninsula	1,013 (6%)	1,082 (6%)
Total Trips at Portland Peninsula Cordon During Peak Hour	16,030 ¹	19,572 ¹

Note: ¹ The cordon volume totals shown in this table do not match the cordon volume totals in the table on the previous page because this table counts “through-vehicles” only once; on the previous page, a “through-vehicle” is counted twice, once entering the Peninsula, once exiting the Peninsula. The numbers do correspond, however. For example, this table reports there are 16,030 vehicles crossing the cordon during the morning peak hour. If the “through-vehicles” are counted twice (i.e., add another 1,013 to the total), the total cordon crossing volume becomes 17,043, which matches the total in the table on the previous page.

Does the proportion of through-trips and local-trips vary by portal?

Yes, through-traffic comprises a much larger proportion of traffic at some portals. As illustrations, Tables 3 and 4 present the composition of traffic at the Forest Avenue portal and on Casco Bay Bridge, respectively.

On Forest Avenue, the through-traffic proportions are 19 and 16 percent during the morning and evening hours, respectively. The through-traffic proportions on Casco Bay Bridge are substantially higher, 29 and 28 percent during the morning and evening peak hours, respectively.

Through-traffic proportions for all Portland Peninsula portals are presented in Appendix B.

Table 3. Trip Types at Forest Avenue Portal

	AM Peak Hour	PM Peak Hour
Vehicles that Enter the Peninsula via Forest Avenue and Stop at a Destination on the Peninsula	1,659 (51%)	1,348 (34%)
Vehicles that Begin a Trip on the Peninsula and Exit the Peninsula via Forest Avenue	953 (30%)	1,930 (50%)
Vehicles that Pass Through the Peninsula, Either Entering or Exiting via Forest Avenue	620 (19%)	618 (16%)
Total Forest Avenue Trips During Peak Hour	3,232	3,896

Table 4. Trip Types on Casco Bay Bridge

	AM Peak Hour	PM Peak Hour
Vehicles that Enter the Peninsula via Casco Bay Bridge and Stop at a Destination on the Peninsula	1,521 (48%)	869 (25%)
Vehicles that Begin a Trip on the Peninsula and Exit the Peninsula via Casco Bay Bridge	716 (23%)	1,594 (47%)
Vehicles that Pass Through the Peninsula, Either Entering or Exiting via Casco Bay Bridge	924 (29%)	969 (28%)
Total Casco Bay Bridge Trips During Peak Hour	3,161	3,432

What are the primary through-traffic movements on the Peninsula?

Nearly all of the through-traffic on the Peninsula either enters or exits via Casco Bay Bridge. Figure 2 in Chapter 2 of the report depicts the through-traffic patterns linked with Casco Bay Bridge. The figure also presents the two-way through-traffic volume, summed for the AM and PM peak hours, as estimated for each through-traffic pattern.

For example, during the two morning and evening peak hours, an estimated 1,225 vehicles pass through the Portland Peninsula between Casco Bay Bridge and Forest Avenue, continuing either on Forest Avenue or I-295. This through-traffic link to Forest Avenue represents 65 percent of all through-trips on Casco Bay Bridge (1,225 of the 1,893 total through-trips on Casco Bay Bridge).

The second tier of through-traffic movements linked to Casco Bay Bridge are Veterans Bridge, St. John Street, Congress Street/Park Avenue, and Deering Avenue. Each portal comprises between 9 and 12 percent of the Casco Bay Bridge through-traffic volume.

The lowest through-traffic volumes linked to Casco Bay Bridge are Franklin Arterial, Washington Avenue, and Preble Street. In total, these three portals comprise only 3 percent of the Casco Bay Bridge through-traffic.

The other through-traffic patterns on the Peninsula are relatively minor and typically skirt the edge of the Peninsula. Examples of these minor through-traffic patterns include (1) trips between Preble Street Extension (Hannaford Plaza, Baxter Boulevard) and the I-295/Franklin Arterial interchange and (2) trips between Outer Congress Street and St. John Street.

Where are the through-trips coming from and going to?

Table 5 on the following page presents the origins and destinations of the Portland Peninsula through-trips surveyed during the morning and evening peak hours. For example, the first numeric column of the table lists the through-trips which start or end in Portland (but outside the Peninsula). The survey measured 369 trips between Cape Elizabeth and Portland that passed through the Peninsula.

As shown in the table, the majority of through-trips have at least one end in Portland (1,142, or 55% of the 2,095 total). The largest quantities of through-trips are between Portland and South Portland and between Portland and Cape Elizabeth. Together, these two movements comprise 48% of all through-trips.

The next largest number of through-trips, in terms of jurisdiction-pairs, is between the combination of Cape Elizabeth and South Portland on the south and the combination of Falmouth and the Northeast and North districts¹. These jurisdiction-pairs have a total of 468 peak hour through-trips (22% of all Portland Peninsula through-trips). All of these through-trips cross Casco Bay Bridge, with nearly all (91 percent) using Forest Avenue to enter/exit the Peninsula. The remainder use Washington Avenue (5 percent) and Franklin Arterial (4 percent). [note: this information is not presented in the table]

The table indicates there are 160 through-trips (94 plus 66) between South Portland and South Portland and between Cape Elizabeth and South Portland. At first glance, both movements appear implausible. An examination of the entry and exit portals for these two movements reveals these through-trips travel between Casco Bay Bridge and Veterans Bridge. For trips between Ferry Village and Maine Mall, for example, one possible route would follow Casco Bay Bridge, Commercial Street, Veterans Bridge and I-295. During time periods with traffic congestion along Broadway, this path through the Peninsula may indeed be preferable.

¹ Falmouth and the North and Northeast districts comprise towns along the I-95 and Maine turnpike corridors to the north of Portland.

Table 5. Jurisdiction-Pairs for AM and PM Peak Hour Through-Trips

	Portland	Cape Elizabeth	Falmouth	Gorham	Scarborough	South Portland	Total
Portland	34						34
Cape Elizabeth	369	0					369
Falmouth	5	41	0				46
Gorham	0	25	0	0			25
Scarborough	19	3	0	0	0		22
South Portland	638	94	84	33		7 66	922
Westbrook	12	42	0	0		0 43	97
Northeast*	10	83	0	0		0 166	259
North*	20	0	0	0		0 94	114
Northwest*	14	12	0	0		0 14	40
West*	6	4	0	0		0 21	31
Southwest*	0	23	0	0		0 27	50
South*	15	17	0	0		0 54	86
Total	1142	344	84	33		7 485	2095

*district definitions -- listed are jurisdictions for which survey responses were received

Northeast	North	Northwest	South	Southwest	West
Augusta	Auburn	Bridgton	Arundel	Alfred	Cornish
Bath	Cornville	Casco	Biddeford	Buxton	Hiram
Blue Hill Falls	Gray	Denmark	Eliot	Dayton	Limerick
Boothbay	Kingfield	Fryeburg	Kennebunk	Durham	Limington
Boothbay Harbor	Lewiston	Harrison	Kennebunkport	Hollis	Standish
Bowdoinham	Lisbon Falls	Naples	Massachusetts	Lebanon	Steep Falls
Brunswick	Litchfield	S Casco	New Hampshire	Lyman	
Cumberland	Livermore	Windham	Ocean Park	S Berwick	
Damariscotta	Minot		Old Orchard Beach	Sanford	
Edgecomb	New Gloucester		Saco	Waterboro	
Freeport	Otisfield		Wells		
Friendship	Oxford				
Harpswell	Poland				
Jefferson	Pownal				
Mechanic Falls	Raymond				
Montville	Strong				
Nobleboro	W Gardiner				
North Yarmouth					
Phippsburg					
Searsmont					
Southport					
St George					
Topsham					
Vassalboro					
W Bath					
Waterville					
Yarmouth					

Where do motorists destined to the Peninsula come from?

Table 6 presents the distribution of origins of surveyed trips that have a destination within the Peninsula (i.e., this table excludes through-trips). The table lists town-by-town values for both the morning and evening peak hours.

During the morning peak, an estimated 26 percent of all trips with a Peninsula destination originate within Portland (but outside the Peninsula). Another 36 percent originate from the six neighboring communities of Cape Elizabeth, Falmouth, Gorham, Scarborough, South Portland and Westbrook. The remaining 38 percent originate beyond the core seven communities of the region.

The largest percentage of morning peak-hour trips destined to the Peninsula originate within Portland (26 percent, as noted above). The next largest proportion originates in the “northeast” district (13 percent), defined as Cumberland, Yarmouth and the I-95 corridor. South Portland is in the third place with 11 percent. Fourth on the list is the “south” district with 10 percent, defined as Saco, Biddeford and the Turnpike corridor.

During the morning peak hour, a substantial proportion of the inbound traffic flow is comprised of commuters. During the afternoon peak hour, the proportion of inbound commuters decreases as other trips become part of the traffic mix. As a result, the distribution of trip origins changes. Portland (with 38 percent of the trips) still comprises the largest proportion of trip origins. Another 40 percent originate within the six neighboring communities (about the same as the morning peak hour proportion) but only 22 percent originate outside the core communities (a significant decrease from the morning peak hour).

Table 6. Origins of Trips with a Destination on the Peninsula

Origins of Trips with a Peninsula Destination	AM Peak Hour		PM Peak Hour	
	# Entering Vehicles	% of Entering Vehicles	# Entering Vehicles	% of Entering Vehicles
Portland (outside Peninsula)	2,665	26 %	2,604	38 %
Cape Elizabeth	665	6 %	458	7 %
Falmouth	412	4 %	242	3 %
Gorham	284	3 %	161	2 %
Scarborough	678	7 %	334	5 %
South Portland	1,139	11 %	1,109	16 %
Westbrook	502	5 %	491	7 %
Northeast	1,327	13 %	847	12 %
North	521	5 %	123	2 %
Northwest	416	4 %	108	2 %
West	266	3 %	133	2 %
Southwest	348	3 %	82	1 %
South	1,021	10 %	227	3 %
TOTAL	10,244	100 %	6,938	100 %

Where do trips destined to the Peninsula enter the Peninsula?

Table 7 lists the primary routes of access to the Peninsula for each jurisdiction of trip origin during the morning peak hour. For example, a total of 2,665 vehicles have a trip origin in Portland and a destination in the Peninsula. The greatest proportion of those vehicles enter the Peninsula via Preble Street (25 percent), followed by Forest Avenue, Congress Street and Deering Avenue. Throughout the table, only entry portals with at least 15 percent of the total are shown, except for Portland trips.

Table 7. Primary Routes of Access to the Peninsula

Origins of Trips to Peninsula During AM Peak Hour	# Entering Vehicles	Primary Entry Portals into Peninsula
Portland (outside Peninsula)	2,665	25% via Preble Street, 21% via Forest Avenue, 14% via Congress St, 13% via Deering Avenue
Cape Elizabeth	665	100% via Casco Bay Bridge
Falmouth	412	43% via Franklin Arterial, 32% via Forest Ave, 22% via Washington Ave
Gorham	284	49% via Congress Street, 18% via Preble St
Scarborough	678	53% via Veterans Br, 15% via Casco Bay Br
South Portland	1,139	66% via Casco Bay Br, 24% via Veterans Br
Westbrook	502	37% via Congress Street, 26% via Preble Street, 18% via Forest Avenue
Northeast	1,327	38% via Franklin Art, 23% via Washington Ave, 22% via Forest Avenue, 15% via Congress Street
North	521	39% via Franklin Arterial, 20% via Forest Avenue
Northwest	416	44% via Forest Avenue
West	266	41% via Congress Street
Southwest	348	44% via Veterans Bridge, 22% via Congress St
South	1,021	58% via Veterans Bridge
TOTAL	10,244	

As part of the data reduction process, the on-Peninsula traffic analysis zone (comprised of multiple blocks) was identified for every trip that ended or began in the Peninsula. Therefore, trip origin-destination patterns are available for each traffic analysis zone within the Peninsula. To simplify analysis of data relative to this question, the Peninsula was subdivided into eight sectors, as shown in Figure 3 of Chapter 4 in the report.

The distribution of traffic at entry portals, disaggregated by Peninsula sector, is shown in Table 8. For example, morning peak hour traffic destined to Bayside (sector 2) enters the Peninsula at the following portals:

- 8 percent via southbound I-295 to Washington Avenue
- 23 percent via southbound I-295 to Franklin Arterial
- 13 percent via northbound I-295 to Franklin Arterial
- 23 percent via Preble Street
- 9 percent via southbound Forest Avenue
- 4 percent via northbound I-295 to Forest Avenue
- 2 percent via Deering Avenue
- 11 percent Congress Street
- 6 percent via Casco Bay Bridge

Outbound distributions and PM peak hour distributions are included in Appendix C.

An interesting observation can be made about the distributions for sectors 3 and 7 (i.e., the Portland Waterfront and the Old Port). During the morning peak hour, 22 and 29 percent of the traffic to sectors 3 and 7, respectively, enter the Peninsula via Veterans Bridge. At the same time, 4 percent of the traffic to those sectors arrives via the northbound I-295 interchange with Franklin Arterial. During the evening peak hour, however, 27 and 25 percent of the sector 3 and 7 traffic, respectively, exit the Peninsula via Franklin Arterial to I-295. In contrast, only 14 percent of the sector 3 and 7 traffic exits in the evening via Veterans Bridge. Therefore, there is a significant traffic flow that uses Veterans Bridge and Commercial Street in the morning, likely to avoid traffic congestion at the Franklin Arterial interchange.

Table 8. Distribution of Traffic at Entry Portals During AM Peak Hour

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8
enter via SB Washington Ave	27%	8%	10%	3%	5%	1%	24%	2%
enter via SB 295 to Franklin Arterial	8%	23%	17%	13%	4%	1%	3%	4%
enter via NB 295 to Franklin Arterial	25%	13%	4%	2%	0%	0%	4%	0%
enter via SB Preble Street	17%	23%	13%	14%	5%	0%	17%	2%
enter via SB 295 to SB Forest Ave	0%	0%	0%	14%	11%	11%	0%	15%
enter via SB Forest Ave to SB Forest Ave	0%	9%	5%	21%	12%	5%	4%	7%
enter via NB 295 to SB Forest Ave	0%	4%	1%	12%	0%	0%	0%	0%
enter via SB Deering Ave	0%	2%	1%	2%	9%	18%	0%	7%
enter via SB St John St	0%	0%	1%	0%	0%	13%	0%	16%
enter via EB Congress St	0%	11%	9%	3%	16%	37%	4%	30%
enter via Veterans Bridge	7%	0%	22%	0%	9%	0%	29%	6%
enter via Casco Bay Bridge	17%	6%	16%	17%	30%	14%	15%	12%
Total to Peninsula Sector	100%	100%	100%	100%	100%	100%	100%	100%

Does the distribution of jurisdiction origins/destinations vary according to trip origin location on the Peninsula?

The short answer is yes. Table 9 presents the origin and destination distribution for three sectors adjacent to I-295 (sectors 2, 4 and 6) and three sectors adjacent to Portland Harbor (sectors 3, 5 and 7).

During the morning peak hour, 32 percent of trips to the ‘northerly-half’ of the Peninsula originate to the south. This proportion increases to 44 percent when the destination is the ‘southerly-half’ of the Peninsula. The reverse occurs for trips from the north where the higher percentage is seen for the ‘northerly-half’ of the Peninsula. During the evening peak hour (the bottom half of the table), the same phenomenon is observed.

Table 9. Origins and Destinations of Trips by Sector of Portland Peninsula

	proportion of trips to sectors 2, 4 & 6	proportion of trips to sectors 3, 5 & 7
from Portland	27 %	23 %
from south (Cape Elizabeth, South Portland, South, Scarborough, Southwest)	32 %	44 %
from northeast (Falmouth, Northeast, North)	24 %	20 %
from northwest and west (Westbrook, Gorham, Northwest, West)	17 %	13 %
	proportion of trips from sectors 2, 4 & 6	proportion of trips from sectors 3, 5 & 7
to Portland	28 %	26 %
to south (Cape Elizabeth, South Portland, South, Scarborough, Southwest)	30 %	39 %
to northeast (Falmouth, Northeast, North)	22 %	18 %
to northwest and west (Westbrook, Gorham, Northwest, West)	20 %	16 %

Are there additional potential uses of the origin-destination survey data?

The anticipated primary uses of the origin-destination survey data are as follows:

- refine and validate the PACTS travel demand model
- assist with estimation of trip distribution for specific developments in the Peninsula (e.g., Bayside, Waterfront)
- assist with estimation of traffic impacts associated with roadway system changes (e.g., modifications to Veterans Bridge access to the Peninsula during reconstruction of Veterans Circle)

Appendix A. Data Collection Methodology for Origin-Destination Survey

The purposes of the survey were twofold, as follows:

- obtain trip origin and destination information for all vehicles that enter or exit the Peninsula during the morning and evening peak hour
- determine the travel path driven within the Peninsula

The Peninsula cordon, for the purpose of this survey, was defined as follows:

- Washington Avenue at its interchange with I-295
- Franklin Arterial at its interchange with I-295
- Preble Street Extension, north of Marginal Way
- Forest Avenue, north of Marginal Way
- Deering Avenue, north of Park Avenue
- St. John Street, north of Park Avenue
- Park Avenue, west of St. John Street
- Congress Street, west of St. John Street
- Veterans Bridge
- Casco Bay Bridge

The selected means of collecting the desired information was a mailback survey. Field survey personnel were trained to record observed license plates and license plate code (e.g., passenger car, conservation, university, commercial, municipal) by voice into a tape recorder. The recording of license plates took place on Wednesday, March 28, 2001 between 7:30 and 8:30 AM and between 4:00 and 5:00 PM.

The address of the registered owner of the vehicle was obtained from the Department of Motor Vehicles and the survey requesting information about trip(s) that day was mailed to that address. The survey instrument requested the following information:

- for through-trips, the origin jurisdiction, the entry portal, the exit portal, and the destination jurisdiction
- for trips originating in the Peninsula, the trip origin (marked on a map), the exit portal, and the destination jurisdiction
- for trips destined to the Peninsula, the origin jurisdiction, the entry portal, and the destination (marked on a map).

For each trip, the survey also requested information on the path/route driven within the Peninsula. The survey was also posted on the project website and provided the ability for internet-based survey responses.

Field personnel recorded 20,817 license plates. A total of 13,370 license plates were considered usable for distribution of the motorist survey. The remainder constituted duplicates (i.e., license plates recorded twice because they were through trips or they were captured during both the morning and afternoon survey periods), municipal vehicles, motor pool vehicles, or rental cars. Surveys were mailed to the registered addresses for 9,000 vehicles, in line with the objective of surveying approximately 25 percent of the cordon traffic.

Appendic C

[insert file "appendix c"]

Portland Peninsula Forecasts			
Intersection: Washington Avenue at I-295			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Right	715	1112
Eastbound			
	Thru	3942	5187
Westbound			
	Left	477	636
	Thru	2502	3036
Intersection: Franklin Arterial and I-295			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	862	1293
	Right	1147	1606
Eastbound			
	Thru	2889	3660
	Right	436	502
Westbound			
	Left	489	711
	Thru	2133	2445
Intersection: Forest Avenue at I-295			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	448	543
	Thru	1145	1262
	Right	595	799
Southbound			
	Left	200	309
	Thru	883	1073
	Right	540	749
Eastbound			
	Left	422	458
	Thru	2239	2374
	Right	210	307
Westbound			
	Left	615	688
	Thru	2035	2586
	Right	190	324

Intersection:		Washington Avenue at Cumberland Avenue	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	44	19
	Thru	522	622
	Right	30	154
Southbound			
	Left	51	170
	Thru	264	353
	Right	66	18
Eastbound			
	Left	115	56
	Thru	129	270
	Right	21	18
Westbound			
	Left	9	97
	Thru	88	197
	Right	44	273
Intersection:		Washington Avenue at Congress Street	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	7	15
	Thru	90	211
	Right	9	20
Southbound			
	Left	78	96
	Thru	37	125
	Right	201	247
Eastbound			
	Left	445	511
	Thru	197	210
	Right	9	26
Westbound			
	Left	7	19
	Thru	149	151
	Right	85	93
Intersection:		Franklin Arterial at Marginal Way	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	243	0
	Thru	1536	2899
	Right	35	0
Southbound			

	Left	108	0
	Thru	644	886
	Right	173	326
Eastbound			
	Left	249	0
	Thru	127	0
	Right	267	520
Westbound			
	Left	24	0
	Thru	160	0
	Right	224	0
Intersection: Franklin Arterial at Somerset/Fox			
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	20	82
	Thru	1337	1900
	Right	21	91
Southbound			
	Left	130	277
	Thru	685	930
	Right	47	95
Eastbound			
	Left	312	676
	Thru	23	152
	Right	4	17
Westbound			
	Left	16	62
	Thru	33	189
	Right	165	327
Intersection: Franklin Arterial at Cumberland Avenue			
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	35	69
	Thru	1146	1808
	Right	28	50
Southbound			
	Left	76	101
	Thru	571	855
	Right	30	44
Eastbound			
	Left	181	239
	Thru	124	183
	Right	48	80
Westbound			

	Left	12	15	
	Thru	140	176	
	Right	93	94	
Intersection: Franklin Arterial at Congress St				
PM Peak Hour				
		Actual 2000	Base 2025	
Northbound				
	Left	15	17	
	Thru	740	1283	
	Right	35	54	
Southbound				
	Left	85	128	
	Thru	412	670	
	Right	134	146	
Eastbound				
	Left	330	407	
	Thru	359	397	
	Right	16	19	
Westbound				
	Left	44	70	
	Thru	198	211	
	Right	139	230	
Intersection: Franklin Arterial at Middle Street				
PM Peak Hour				
		Actual 2000	Base 2025	
Northbound				
	Left	40	38	
	Thru	514	877	
	Right	9	15	
Southbound				
	Left	57	191	
	Thru	326	404	
	Right	89	165	
Eastbound				
	Left	226	376	
	Thru	139	230	
	Right	50	31	
Westbound				
	Left	13	10	
	Thru	77	88	
	Right	50	105	
Intersection: Franklin Arterial at Fore Street				
PM Peak Hour				
		Actual 2000	Base 2025	
Northbound				

	Left	22	18		
	Thru	318	569		
	Right	5	8		
Southbound					
	Left	73	111		
	Thru	208	240		
	Right	108	91		
Eastbound					
	Left	193	214		
	Thru	191	179		
	Right	29	20		
Westbound					
	Left	18	33		
	Thru	112	150		
	Right	52	150		
Intersection: Franklin Arterial at Commercial Street					
PM Peak Hour					
		Actual 2000	Base 2025		
Northbound					
	Left	32	17		
	Thru	57	68		
	Right	27	31		
Southbound					
	Left	22	52		
	Thru	59	58		
	Right	174	183		
Eastbound					
	Left	264	402		
	Thru	349	512		
	Right	56	34		
Westbound					
	Left	22	45		
	Thru	202	446		
	Right	24	123		
Intersection: Pearl Street and Marginal Way					
PM Peak Hour					
		Actual 2000	Base 2025		
Northbound					
	Left	0	0		
	Thru	1	1		
	Right	0	0		
Southbound					
	Left	0	0		
	Thru	1	1		
	Right	0	0		
Eastbound					

	Left	0	0
	Thru	682	769
	Right	1	7
Southbound			
	Left	0	87
	Thru	539	704
	Right	0	0
Eastbound			
	Left	1262	1321
	Thru	1	119
	Right	0	0
Westbound			
	Left	1	110
	Thru	1	1
	Right	1	38
Intersection: Forest Avenue at Portland Street/Park Avenue			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	50	102
	Thru	308	396
	Right	29	38
Southbound			
	Left	201	334
	Thru	265	352
	Right	54	140
Eastbound			
	Left	110	144
	Thru	221	293
	Right	41	43
Westbound			
	Left	23	17
	Thru	274	390
	Right	244	220
Intersection: Forest Avenue at Cumberland Avenue			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	21	32
	Thru	184	274
	Right	23	33
Southbound			
	Left	73	81
	Thru	212	235
	Right	55	66
Eastbound			

	Left	29	35	
	Thru	171	199	
	Right	19	22	
Westbound				
	Left	25	28	
	Thru	300	358	
	Right	190	220	
Intersection: Forest Avenue at Congress Street				
PM Peak Hour				
		Actual 2000	Base 2025	
Northbound				
	Left	0	0	
	Thru	1	1	
	Right	0	0	
Southbound				
	Left	162	130	
	Thru	1	1	
	Right	91	126	
Eastbound				
	Left	3	13	
	Thru	307	364	
	Right	0	0	
Westbound				
	Left	0	0	
	Thru	255	293	
	Right	46	116	
Intersection: High Street at Park Avenue				
PM Peak Hour				
		Actual 2000	Base 2025	
Northbound				
	Left	275	365	
	Thru	1052	1134	
	Right	79	81	
Southbound				
	Left	0	0	
	Thru	1	1	
	Right	0	0	
Eastbound				
	Left	192	274	
	Thru	293	397	
	Right	0	0	
Westbound				
	Left	0	0	
	Thru	404	649	
	Right	18	23	

Intersection:		High Street at Cumberland Avenue	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	67	108
	Thru	1141	1269
	Right	141	181
Southbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	108	126
	Thru	78	105
	Right	0	0
Westbound			
	Left	0	0
	Thru	219	276
	Right	157	137
Intersection:		High Street at Congress Street	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	222	266
	Thru	1147	1327
	Right	140	178
Southbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	130	142
	Thru	231	277
	Right	88	88
Westbound			
	Left	0	0
	Thru	270	351
	Right	72	91
Intersection:		High Street at Spring Street	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	100	115
	Thru	998	1201
	Right	90	121
Southbound			

	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	163	149
	Thru	219	225
	Right	0	0
Westbound			
	Left	0	0
	Thru	431	509
	Right	348	430
Intersection: High Street at Danforth Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	137	165
	Thru	965	1088
	Right	16	21
Southbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	184	239
	Thru	119	181
	Right	0	0
Westbound			
	Left	0	0
	Thru	114	190
	Right	39	61
Intersection: High Street at York Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	141	187
	Thru	157	187
	Right	17	22
Southbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	940	1062
	Thru	351	431
	Right	31	31
Westbound			

	Left	17	17
	Thru	346	444
	Right	21	24
Intersection: High Street at Commercial Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	22	23
	Thru	1	1
	Right	26	25
Eastbound			
	Left	76	98
	Thru	634	761
	Right	0	0
Westbound			
	Left	0	0
	Thru	884	985
	Right	239	299
Intersection: State Street at Park Avenue			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	41	45
	Thru	891	937
	Right	320	273
Eastbound			
	Left	0	0
	Thru	444	617
	Right	31	41
Westbound			
	Left	123	219
	Thru	556	802
	Right	0	0
Intersection: State Street at Cumberland Avenue			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			

	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	33	38
	Thru	990	1065
	Right	22	32
Eastbound			
	Left	0	0
	Thru	99	140
	Right	28	37
Westbound			
	Left	187	229
	Thru	99	161
	Right	0	0
Intersection:	State Street at Congress Street		
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	89	100
	Thru	1008	1119
	Right	108	99
Eastbound			
	Left	0	0
	Thru	360	411
	Right	259	293
Westbound			
	Left	94	140
	Thru	398	489
	Right	0	0
Intersection:	State Street at Spring Street		
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	146	162
	Thru	1128	1247
	Right	87	83
Eastbound			

	Left	0	0
	Thru	236	220
	Right	69	64
Westbound			
	Left	190	236
	Thru	341	366
	Right	0	0
Intersection: State Street at Danforth Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	75	90
	Thru	1169	1294
	Right	143	172
Eastbound			
	Left	0	0
	Thru	228	308
	Right	139	172
Westbound			
	Left	37	48
	Thru	214	305
	Right	0	0
Intersection: State Street at York Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	1261	1550
Southbound			
	Left	61	70
	Thru	1269	1420
	Right	15	20
Eastbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Westbound			
	Left	469	602
	Thru	18	27
	Right	0	0

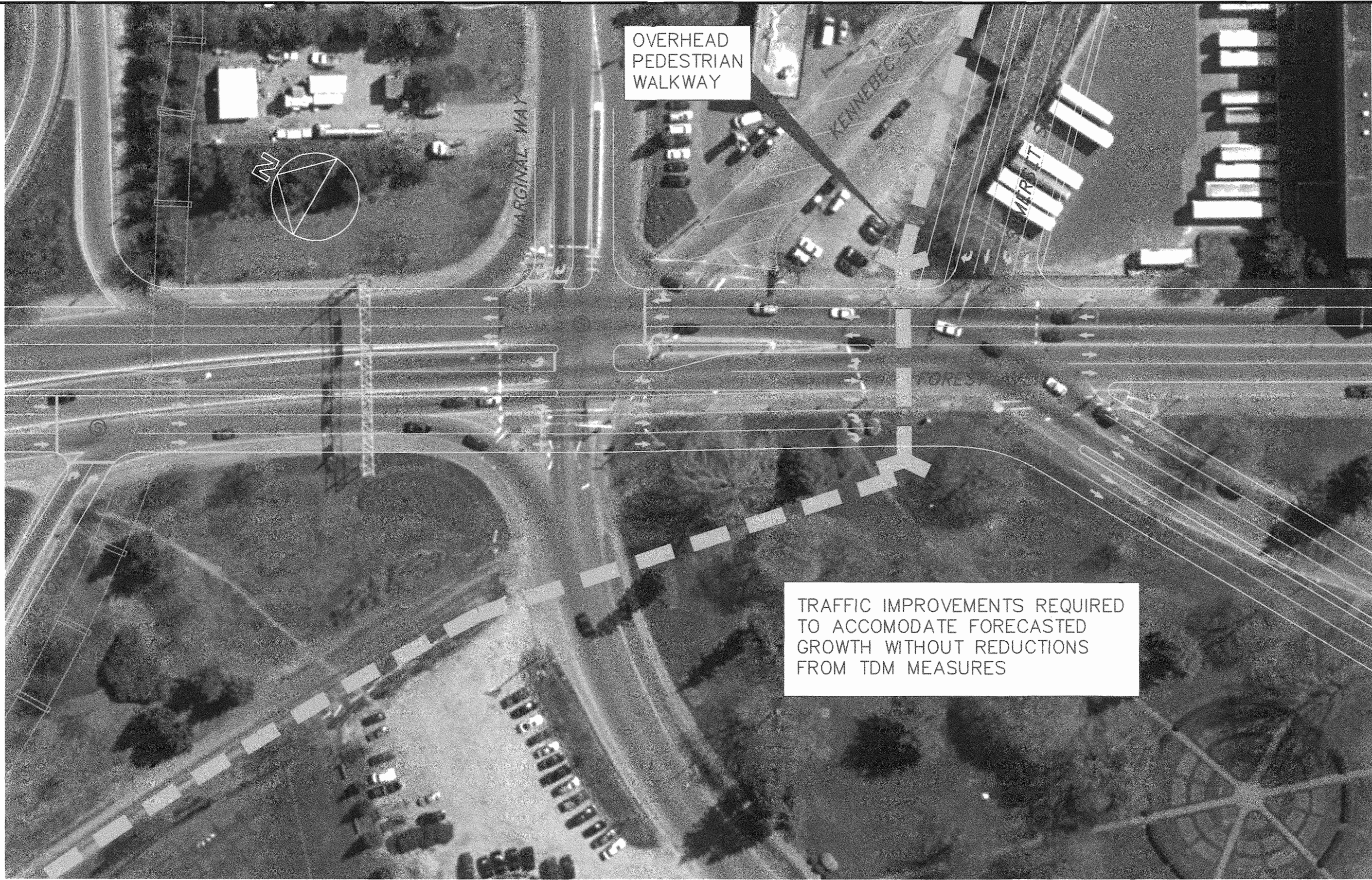
Intersection:		Deering Avenue at Park Avenue	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	116	114
	Thru	230	255
	Right	77	95
Southbound			
	Left	96	149
	Thru	180	224
	Right	64	79
Eastbound			
	Left	57	63
	Thru	243	302
	Right	25	25
Westbound			
	Left	53	63
	Thru	588	690
	Right	235	311
Intersection:		Deering Avenue at Congress Street	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	199	246
	Thru	506	590
	Right	38	42
Southbound			
	Left	91	107
	Thru	244	325
	Right	50	65
Eastbound			
	Left	107	123
	Thru	572	631
	Right	169	211
Westbound			
	Left	39	47
	Thru	413	482
	Right	173	191
Intersection:		Valley Street at Congress Street	
		PM Peak Hour	
		Actual 2000	Base 2025
Northbound			
	Left	70	65
	Thru	126	157
	Right	163	177
Southbound			

	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	25	33
	Thru	629	724
	Right	18	26
Westbound			
	Left	143	239
	Thru	558	643
	Right	34	53
Intersection: St John Street at Park Avenue			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	1013	1128
	Thru	435	522
	Right	244	256
Southbound			
	Left	48	55
	Thru	257	302
	Right	168	205
Eastbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Westbound			
	Left	205	220
	Thru	983	1094
	Right	151	181
Intersection: St John Street at Congress Street			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	868	922
	Right	44	46
Southbound			
	Left	78	92
	Thru	342	384
	Right	0	0
Eastbound			
	Left	460	537
	Thru	593	687
	Right	450	500
Westbound			

	Left	177	189		
	Thru	1	1		
	Right	440	496		
Intersection:		India at Congress			
		PM Peak Hour			
		Actual 2000		Base 2025	
Northbound					
	Left	167	260		
	Thru	1	1		
	Right	300	346		
Southbound					
	Left	0	0		
	Thru	1	1		
	Right	0	0		
Eastbound					
	Left	0	0		
	Thru	370	418		
	Right	109	156		
Westbound					
	Left	143	158		
	Thru	214	252		
	Right	0	0		
Intersection:		India at Fore			
		PM Peak Hour			
		Actual 2000		Base 2025	
Northbound					
	Left	14	43		
	Thru	163	267		
	Right	90	145		
Southbound					
	Left	131	126		
	Thru	155	332		
	Right	63	117		
Eastbound					
	Left	40	30		
	Thru	113	83		
	Right	109	177		
Westbound					
	Left	11	17		
	Thru	186	252		
	Right	180	129		
Intersection:		Fore Street at Mountfort			
		PM Peak Hour			
		Actual 2000		Base 2025	

Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	31	150
	Thru	1	1
	Right	19	19
Eastbound			
	Left	48	53
	Thru	396	397
	Right	0	0
Westbound			
	Left	0	0
	Thru	226	239
	Right	27	156
Intersection: Fox at Marginal Way (relocated)			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Southbound			
	Left	10	42
	Thru	1	1
	Right	20	360
Eastbound			
	Left	20	231
	Thru	154	291
	Right	0	0
Westbound			
	Left	0	0
	Thru	194	214
	Right	10	16
Intersection: Fox at Anderson			
PM Peak Hour			
		Actual 2000	Base 2025
Northbound			
	Left	5	5
	Thru	5	4
	Right	5	6
Southbound			
	Left	10	15
	Thru	5	5
	Right	15	18

Eastbound			
	Left	10	12
	Thru	154	317
	Right	0	0
Westbound			
	Left	0	0
	Thru	189	218
	Right	5	4
Intersection:	Chestnut at Somerset		
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	90	32
	Thru	10	31
	Right	73	138
Southbound			
	Left	1	239
	Thru	1	60
	Right	1	46
Eastbound			
	Left	1	38
	Thru	15	345
	Right	5	29
Westbound			
	Left	20	57
	Thru	225	484
	Right	1	19
Intersection:	Elm at Somerset		
	PM Peak Hour		
		Actual 2000	Base 2025
Northbound			
	Left	1	2
	Thru	777	954
	Right	20	105
Southbound			
	Left	0	0
	Thru	1	1
	Right	0	0
Eastbound			
	Left	1	41
	Thru	1	177
	Right	0	0
Westbound			
	Left	0	0
	Thru	40	106
	Right	275	469



OVERHEAD
PEDESTRIAN
WALKWAY

TRAFFIC IMPROVEMENTS REQUIRED
TO ACCOMODATE FORECASTED
GROWTH WITHOUT REDUCTIONS
FROM TDM MEASURES

1	4/08/05	REVISED MEDIAN
Rev.	Date	Revision

Design:	RCN	Date:	OCT 2002
Draft:	DB	Job No.:	267
Checked:	TLG	Scale:	NONE
File Name: 267-1_LANE USE.DWG			

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Drawing Name:	Forest Avenue 2025 Concept Plan
Project:	PORTLAND PENINSULA PLAN

Figure No.
7.1

PORTLAND PENINSULA MOTORIST SURVEY

A vehicle registered in your name was observed entering or leaving the Portland Peninsula at the location shown on the reverse side of this survey on Wednesday, March 28. Please complete this survey about your morning and afternoon trips that day. If you do not recall the exact nature of your trips that day, provide the information for the last day you traveled into, from, or through the Peninsula.

Mail the survey in the postage-prepaid envelope as soon as possible. If you have any questions regarding the survey or about the study in general, please call Rita Mooney at Greater Portland Council of Governments at 774-9891. If you prefer, you may submit the survey electronically at the website portlandpeninsulastudy.com.

Circle the one statement that best describes your trip **between 7 and 9 that morning**. Please provide the requested information for that statement. If you took more than one trip, describe your first trip.

<i>I drove into and parked on the Portland Peninsula.</i>	<i>I drove into and through the Portland Peninsula.</i>	<i>I drove out of the Portland Peninsula.</i>	<i>I did not drive on the Portland Peninsula that morning.</i>
1. My trip that morning began where?	1. My trip that morning began where?	1. Mark an 'X' where my vehicle was parked that morning.	<i>Answer the 'afternoon' questions below.</i>
City/town	City/town	2. Draw the route taken on the map on the reverse side of this survey and mark as 'AM'	
Street or place name	Street or place name	3. My final destination that morning?	
2. Draw the route taken on the map on the reverse side of this survey and mark as 'AM'	2. Draw the route taken on the map on the reverse side of this survey and mark the route as 'AM'	City/town	
3. Mark an 'X' where I parked that morning or name the garage or lot	3. My final destination that morning?	Street or place name	
	City/town		
	Street or place name		

Circle the one statement that best describes your trip **between 4 and 6 that afternoon**. Please provide the requested information for that statement. If you took more than one trip, describe your first trip.

<i>I drove into and parked on the Portland Peninsula.</i>	<i>I drove into and through the Portland Peninsula.</i>	<i>I drove out of the Portland Peninsula.</i>	<i>I did not drive on the Portland Peninsula that afternoon.</i>
1. My trip that afternoon began where?	1. My trip that afternoon began where?	1. Mark an 'X' where my vehicle was parked that afternoon.	
City/town	City/town	2. Draw the route taken on the map on the reverse side of this survey and mark as 'PM'	
Street or place name	Street or place name	3. My final destination that afternoon?	
2. Draw the route taken on the map on the reverse side of this survey and mark as 'PM'	2. Draw the route taken on the map on the reverse side of this survey and mark the route as 'PM'	City/town	
3. Mark an 'X' where I parked that afternoon or name the garage or lot	3. My final destination that afternoon?	Street or place name	
	City/town		
	Street or place name		

We appreciate your assistance. If you wish to identify current transportation problems on the Peninsula or if you have any suggestions for improvements, please list them below.

Executive Summary

Traffic Assessment for Ocean Gateway and the Waterfront Master Plan

Introduction

The City of Portland retained Gorrill-Palmer Consulting Engineers, Inc. to complete a traffic assessment of the proposed Ocean Gateway and Waterfront Master Plan developments. Figure 1 following this page shows the locations of these developments. The purpose of this assessment was to determine the impact of each project individually and then cumulatively both today and in the year 2025 and determine what roadway improvements will be required to accommodate these developments.

Background Traffic Volume

The predevelopment traffic volumes, the estimated volumes without the development, were estimated by Kevin Hooper Associates, using the PACTS 'TRIPS' model. This model was based on traffic counts collected at intersections within the peninsula during the summers of 1999 and 2000. The 2002 'existing' volumes from the TRIPS model are shown on Diagram 1. The 2025 predevelopment traffic volumes were determined based on the land use development forecast by the Portland Planning Department to occur in the next twenty-five years exclusive of the Waterfront Master Plan and Ocean Gateway. Some of the anticipated projects included redevelopment of Bayside, a potential Aquarium, Civic Center redevelopment, Mercy Hospital and many others. This estimated traffic from these future land uses was added to the TRIPS Model by Kevin Hooper Associates along with the external background growth to develop the 2025 predevelopment traffic volumes shown in Diagram 2.

Trip Generation Estimate for Ocean Gateway and the Waterfront Master Plan

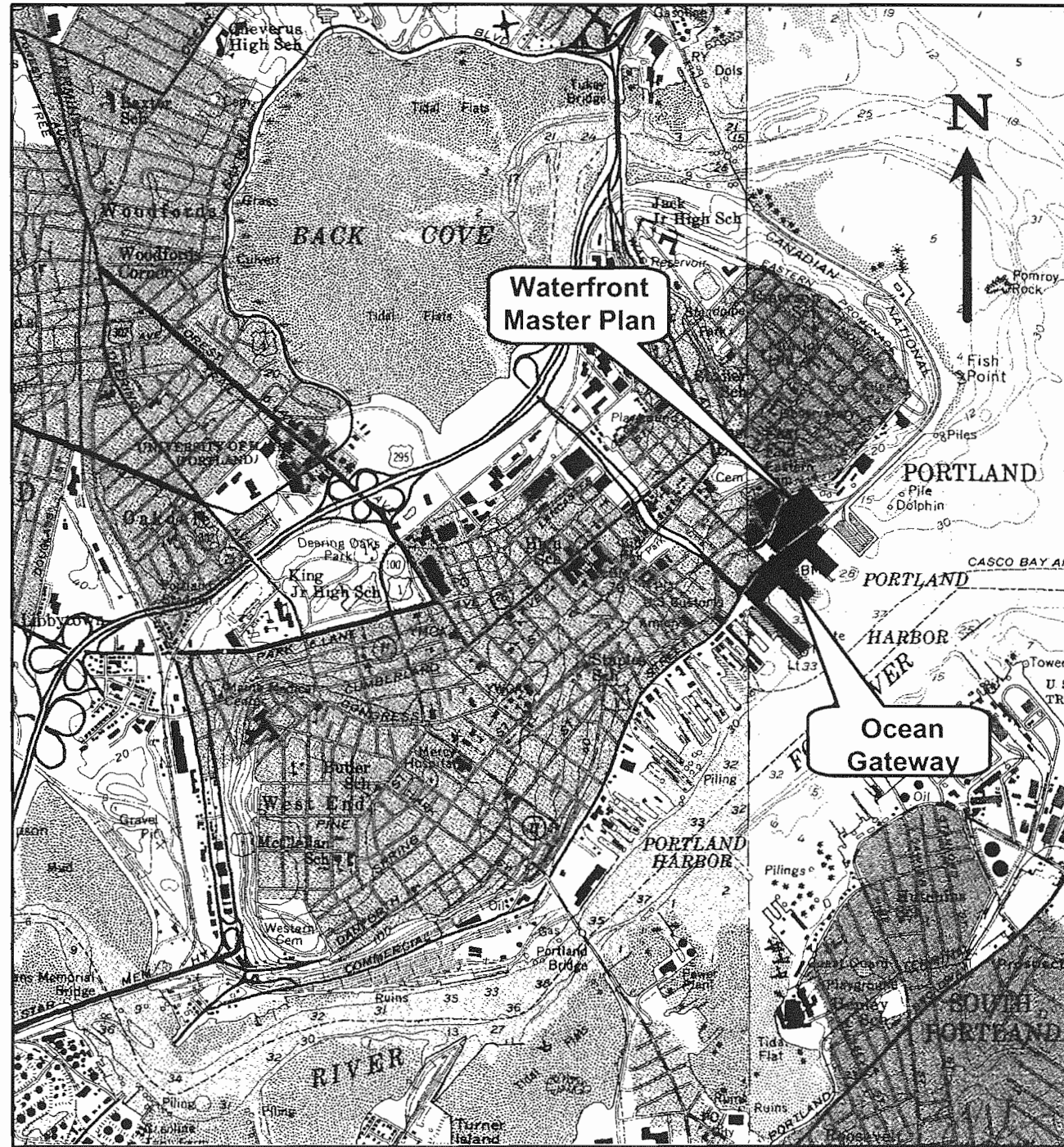
The method used to develop the trip generation estimates for each project is summarized in the following paragraphs.

Ocean Gateway

The trip estimates for Ocean Gateway were developed based on the following ships being docked simultaneously:

- The Scotia Prince
- One 5,000 Passenger Ship
- One 2,500 Passenger Ship

To estimate the trips which will be generated for these ships, Gorrill-Palmer Consulting Engineers, Inc. completed twelve hours of turning movement counts at the intersection of Franklin Street Arterial and Commercial Street during two days; one with a 1,420 passenger cruise ship docked which departed around 6:30 PM and one without any cruise



U.S.G.S. Location Map

Proposed Waterfront Projects - Portland, Maine

U.S.G.S. Portland East and Portland West - 7.5 Minute Series (Topographic)

Design JJB Date 3/8/02

Drawn JJB Scale NTS

Checked TLG Job No. 267.2

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Figure

1

ships. The difference in traffic was 86 trips which were attributed to the cruise ship, yielding a trip rate per passenger of 0.06 trip ends per passenger from 4:30 to 5:30 PM yielding a total estimate trip ends of 454. A graph of the hourly traffic variation is shown in Appendix A. Gorrill-Palmer Consulting Engineers, Inc. also completed traffic counts at the existing Scotia Prince Facility at the International Terminal from 3:00 to 9:00 PM and determined it generates approximately 54 trip ends between 4:30 and 5:30 PM. These existing trips were reassigned to the proposed Ocean Gateway facility as part of the trip assignment procedure.

Waterfront Master Plan

The Waterfront Master Planning Committee envisions a development consisting of approximately 500,000 s.f. of mixed use development. The precise scope and scale of this development was furnished to our office by Wilbur Smith Associates, resulting in an estimated of 914 trip ends during the weekly peak hour from 4:30 to 5:30 PM. This information was based on information published by The Institute of Transportation Engineers (ITE) from a national database.

Determination of Study Area

The study area for our analysis was determined using the volume criteria utilized by the Maine Department of Transportation in their traffic movement permit process. Figure 2 illustrates the study area associated with each project individually and combined. The assignment of these trips on the roadway network was done using the "Trips" model.

Combined Traffic Volumes

The additional trips expected by the Ocean Gateway facility are shown on Diagram 3, while the volumes anticipated by the combined developments are shown on Diagram 4. The PM peak hour traffic volumes for 2025 predevelopment in Diagram 2 were combined with the traffic anticipated from the combined projects to result in the 2025 post development volumes, shown on Diagram 5.

Analyses and Findings

Gorrill-Palmer Consulting Engineers, Inc. completed our analyses utilizing 'Synchro' and 'Sim-Traffic' modeling software. The results of our analyses indicate that improvements will be required without the developments both today and in 2025 and further improvements will be required with the developments. The following Tables have been prepared and are shown in the enclosed pages:

- Table 1 - Improvements required in 2002 without the developments.
- Table 2 - Improvements required in 2025 without the developments.
- Table 3 - Additional Improvements required for both projects combined.

Drawing 1 of the Appendix presents a graphic summary on an aerial base of the improvements required in 2025 with and without the developments. Gorrill-Palmer Consulting Engineers, Inc. has reviewed our modeling and found that with the improvements summarized in Tables 1-3, the traffic generated by the combined development can be accommodated. There will be areas where delay and significant queuing occurs, but this should not pose an operational problem. We envision that the Franklin Street Arterial will play an important role in Portland's transportation network and thus it is important that the Franklin Street Arterial be upgraded as described in the improvement Tables to assure that traffic is not diverted to other streets to reduce travel time.

Impacts to Munjoy Hill

A certain volume of traffic coming to and from the proposed waterfront redevelopment projects is anticipated to utilize the street network in the Munjoy Hill area. However, it is important to understand that impacts to this area will be relatively low when compared to Washington Avenue, Franklin Street Arterial, and Commercial Street. The most significant volumes anticipated by the development would be on Fore Street east of Mountfort Street, where an increase in traffic by approximately five percent. Increases to Congress Street, Cumberland Avenue, and North Street are anticipated to be less than five percent, while increases to the Eastern Promenade are anticipated to be negligible.

As previously discussed, it is important to understand that the proposed improvements to the transportation network play a crucial role to minimizing affects on the local streets at Munjoy Hill. Without these improvements, particularly those to Franklin Street Arterial, delay for drivers along major travel corridors would become unacceptable, with resulting traffic diverted to local streets.

Table 1 – Improvements Required for 2002 Existing Traffic Volumes

Franklin @ I-295

Widen northbound approach to I-295 to three lanes.

Franklin @ Marginal Way:

Provide 2 EB LT lanes (200')
Separate EB RT lane 100'

Somerset @ Franklin:

Provide 2 EB LT lanes (200')

Table 2 – Improvements Required for 2025 Predevelopment Traffic Volumes

Franklin @ Marginal:

Franklin NB 100' right turn lane
Marginal EB dual LT lanes to I-295
Franklin NB dual LT turn lanes
Marginal 250' EB RT lane onto Franklin
Marginal 150' WB RT lane onto Franklin
Franklin NB addition of 3rd thru lane

Franklin @ Somerset/Fox:

Somerset dual LT lanes onto Franklin
Fox 400' RT lane
Franklin NB & SB 200' RT lanes
3 NB thru lanes

Cumberland @ Franklin:

3 EB approach lanes, two LT lanes, one through lane

Congress @ Franklin:

3 EB approach lanes, two LT lanes, one through lane

Commercial @ Franklin:

Restripe to provide 100' WB LT lane

Park & Commercial Streets:

Place signal

Washington @ Cumberland:

Extend 2 lane approach 150' long (EB)

Commercial Street

Restripe Commercial Street for two-way center left-turn lane from Center Street to Casco Bay Bridge, with dedicated left turn lanes at Park and High Streets

Table 3 – Improvements Required for 2025 Postdevelopment Traffic Volumes

Franklin @ Marginal:

Franklin NB 100' right turn lane
Marginal EB dual LT lanes to I-295
Franklin NB dual LT turn lanes
Marginal 250' EB RT lane onto Franklin
Marginal 150' WB RT lane onto Franklin
Franklin NB addition of 3rd thru lane

Franklin @ Somerset/Fox:

Somerset dual LT lanes onto Franklin
Fox 400' RT lane
Franklin NB & SB 200' RT lanes
3 NB thru lanes

Cumberland @ Franklin:

3 EB approach lanes, two LT lanes, one through lane

Congress @ Franklin:

3 EB approach lanes, two LT lanes, one through lane

Commercial @ Franklin:

Restripe to Provide 100' WB LT lane
Add exclusive pedestrian phase

Franklin at Middle

Construct 200' SB left turn lane

Park & Commercial Streets:

Place signal

Washington @ Cumberland:

Make 2 lane approach 150' long (EB)

Washington @ Fox:

Construct 50' LT lanes for Washington at Fox and Walnut

Commercial Street

Restripe Commercial Street for two-way center left-turn lane from Center Street to Casco Bay Bridge, with dedicated left turn lanes at Park and High Streets

Extend Commercial Street

India Street at Fore Street

Install traffic signal

Add 50' SB LT lane

India Street at Middle Street

Install traffic signal

Mountfort Street at Fore Street

Stripe for separate 100' SB TH/LT and RT lanes

India Street at Commercial Street

50' SB LT Lane

150' EB LT Lane

Hancock Street

Extension of Hancock Street to Commercial Street Ext.

Mountfort Street

Extension of Mountfort Street to Commercial Street Ext.

Study Area Determination for Proposed Waterfront Projects
Determination of Intersections Based on MDOT Criteria



Figure 2

S:\Land Projects\267-2\DWG\267-2-plan1.dwg, 03/08/2002 04:38:08 PM, LAN



Rev.	Date	Revision

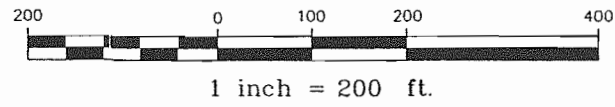
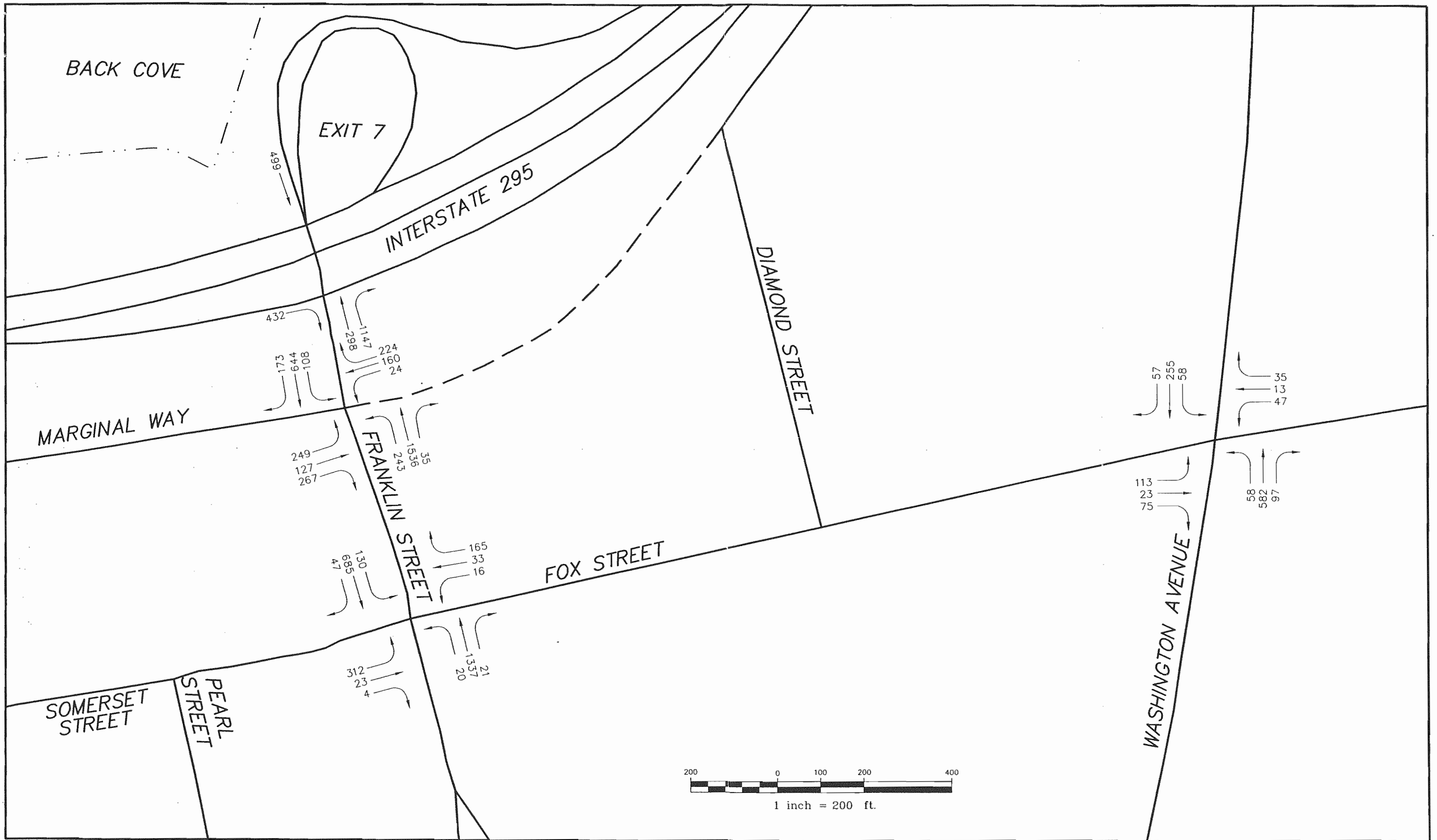
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Proposed Improvements Based on 2025 Volumes
PORTLAND WATERFRONT STUDY
 CITY OF PORTLAND
 389 Congress Street, Portland, Maine 04101

Drawing No.
1



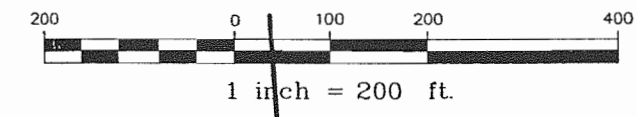
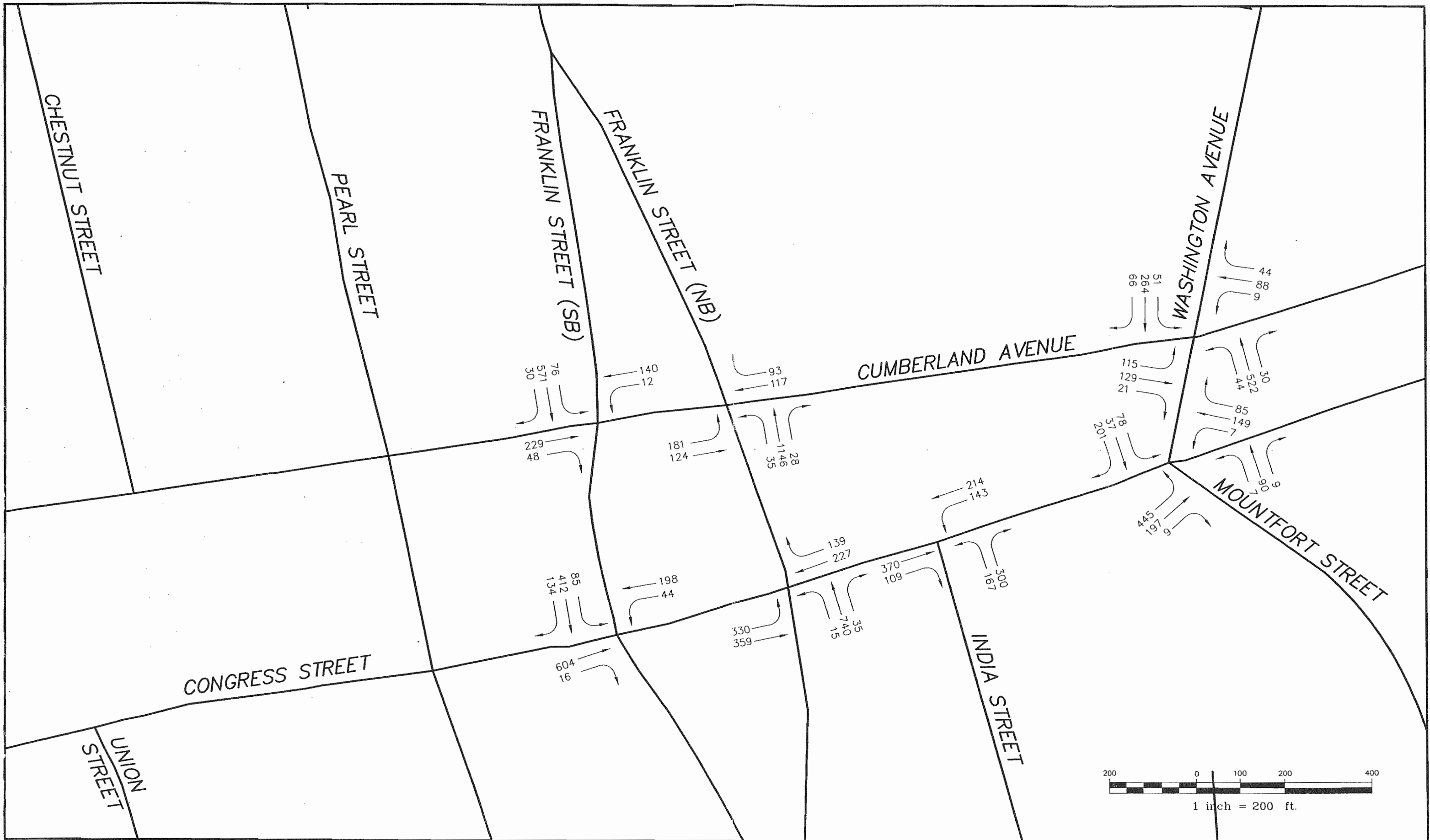
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Drawing Name: 2002 Volumes - PM Peak Hour
 Project: Waterfront Redevelopment Traffic Study
 Portland, Maine

Figure No.
1A



Rev.	Date	Revision

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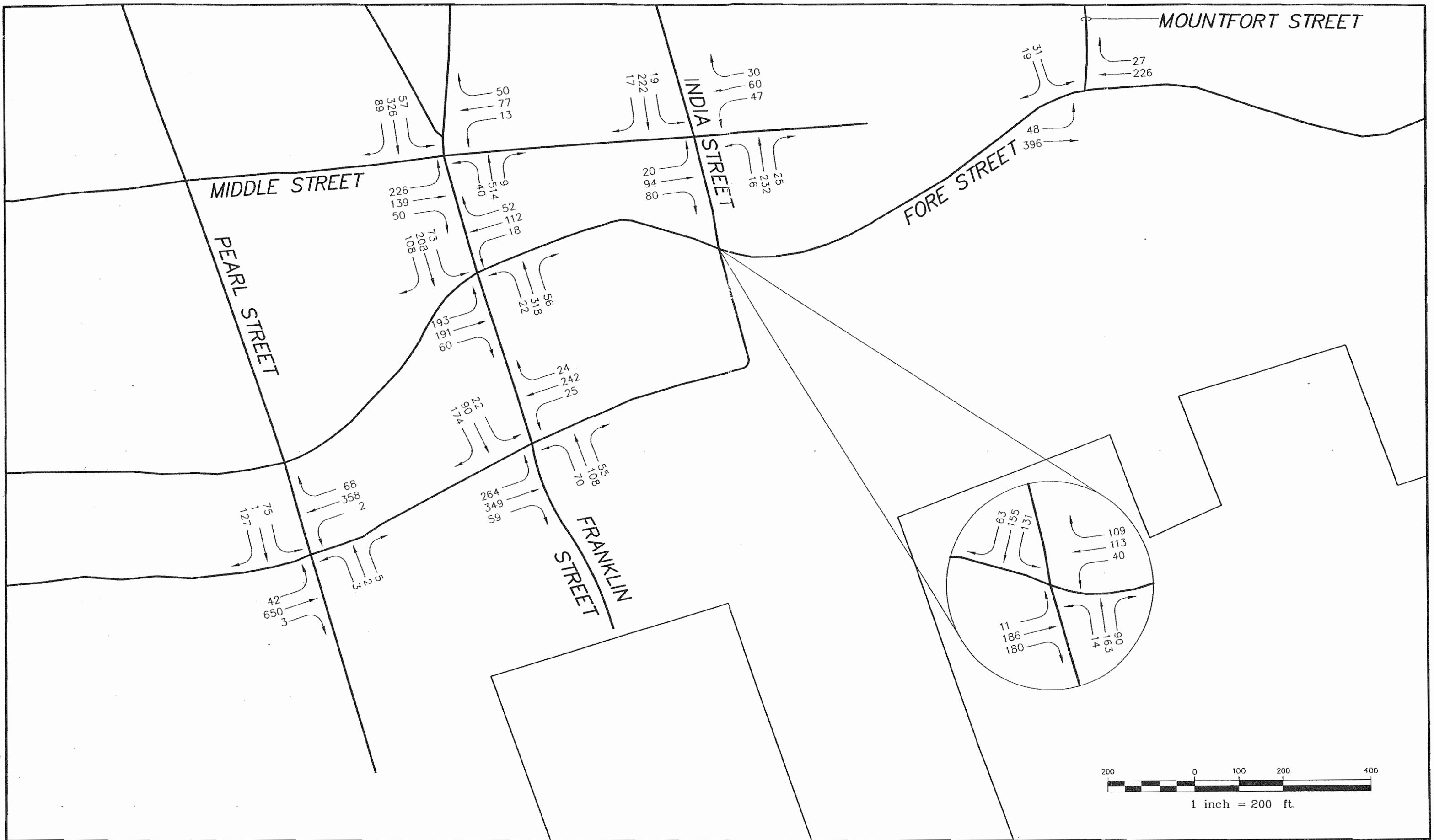
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Drawing Name: **2002 Volumes - PM Peak Hour**

Project: **Waterfront Redevelopment Traffic Study
 Portland, Maine**

Figure No.
1B



Rev.	Date	Revision

Design: JJB	Date: MARCH 2002
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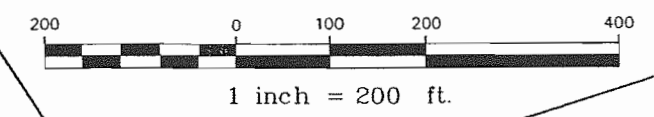
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Drawing Name: 2002 Volumes - PM Peak Hour

Project: Waterfront Redevelopment Traffic Study
 Portland, Maine

Figure No.
1C



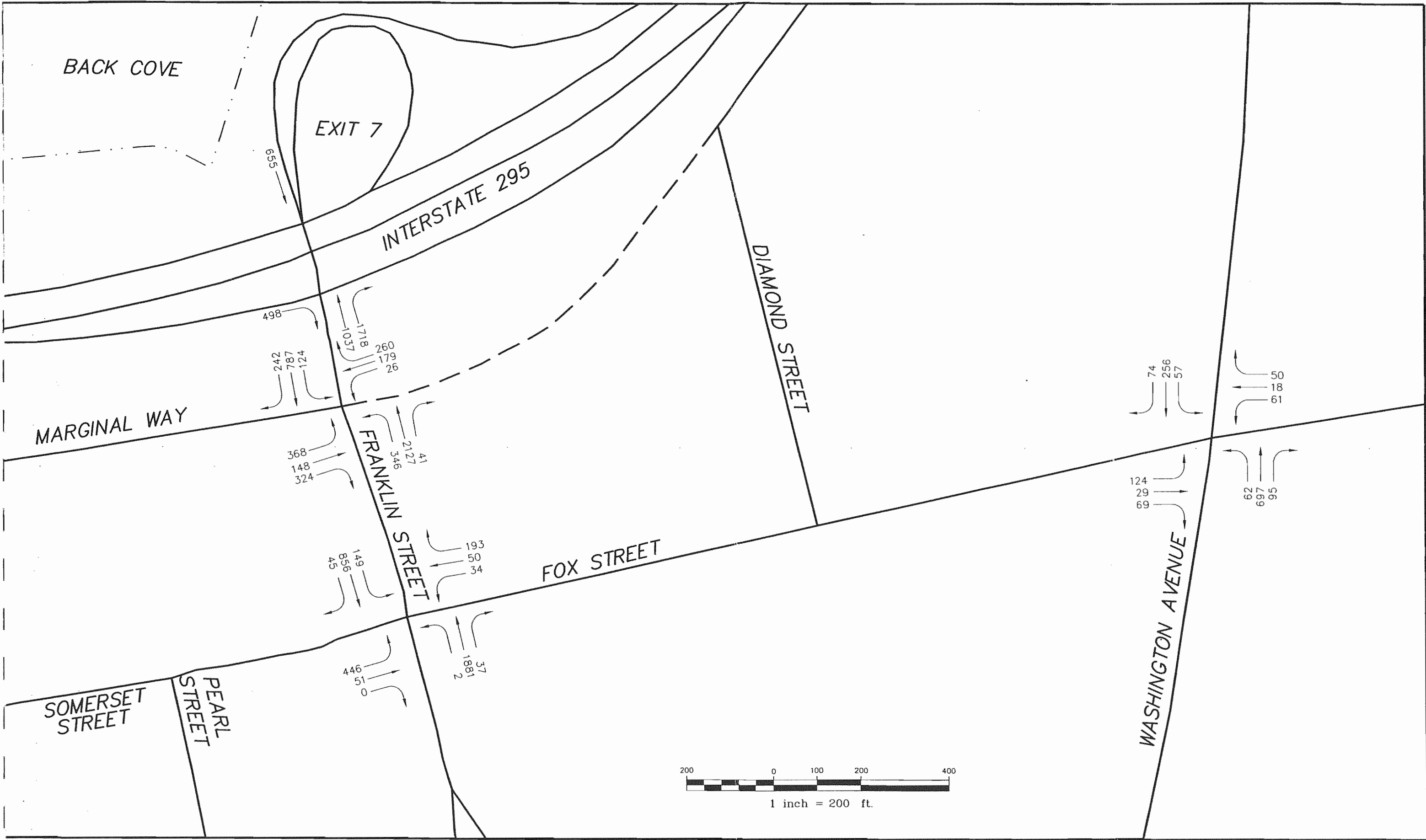
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Drawing Name: **2002 Volumes - PM Peak Hour**
 Project: **Waterfront Redevelopment Traffic Study**
 Portland, Maine

Figure No.
1D



Rev.	Date	Revision

Design: JJB	Date: MARCH 2002
Draft: RDS	Job No.: 267.2
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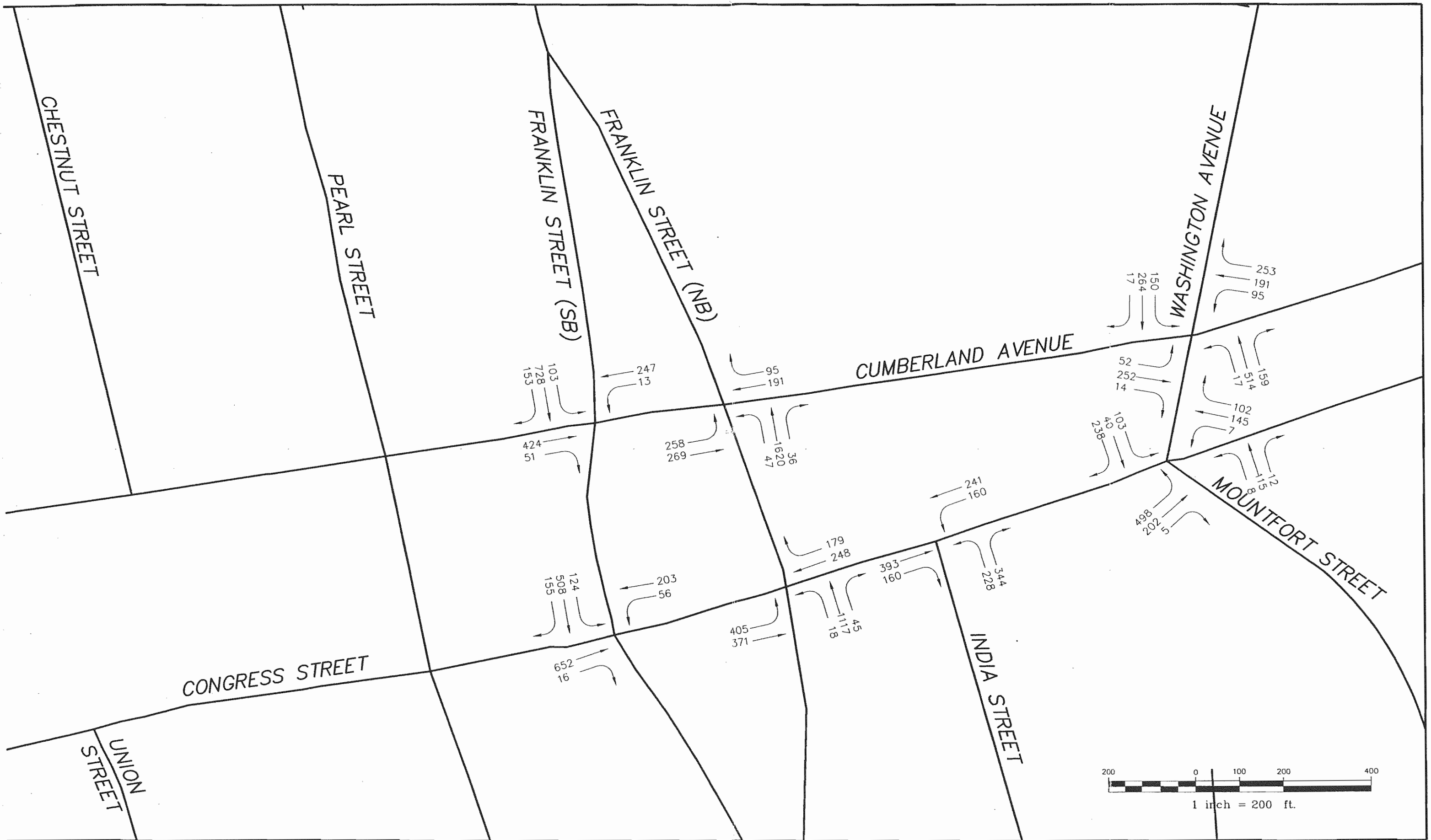
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Drawing Name: **2025 Predevelopment Volumes**

Project: **Waterfront Redevelopment Traffic Study
 Portland, Maine**

Figure No. **2A**



Rev.	Date	Revision

Design: JJB	Date: MARCH 2002
Draft: RDS	Job No.: 267.2
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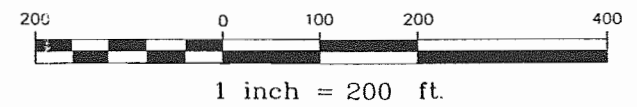
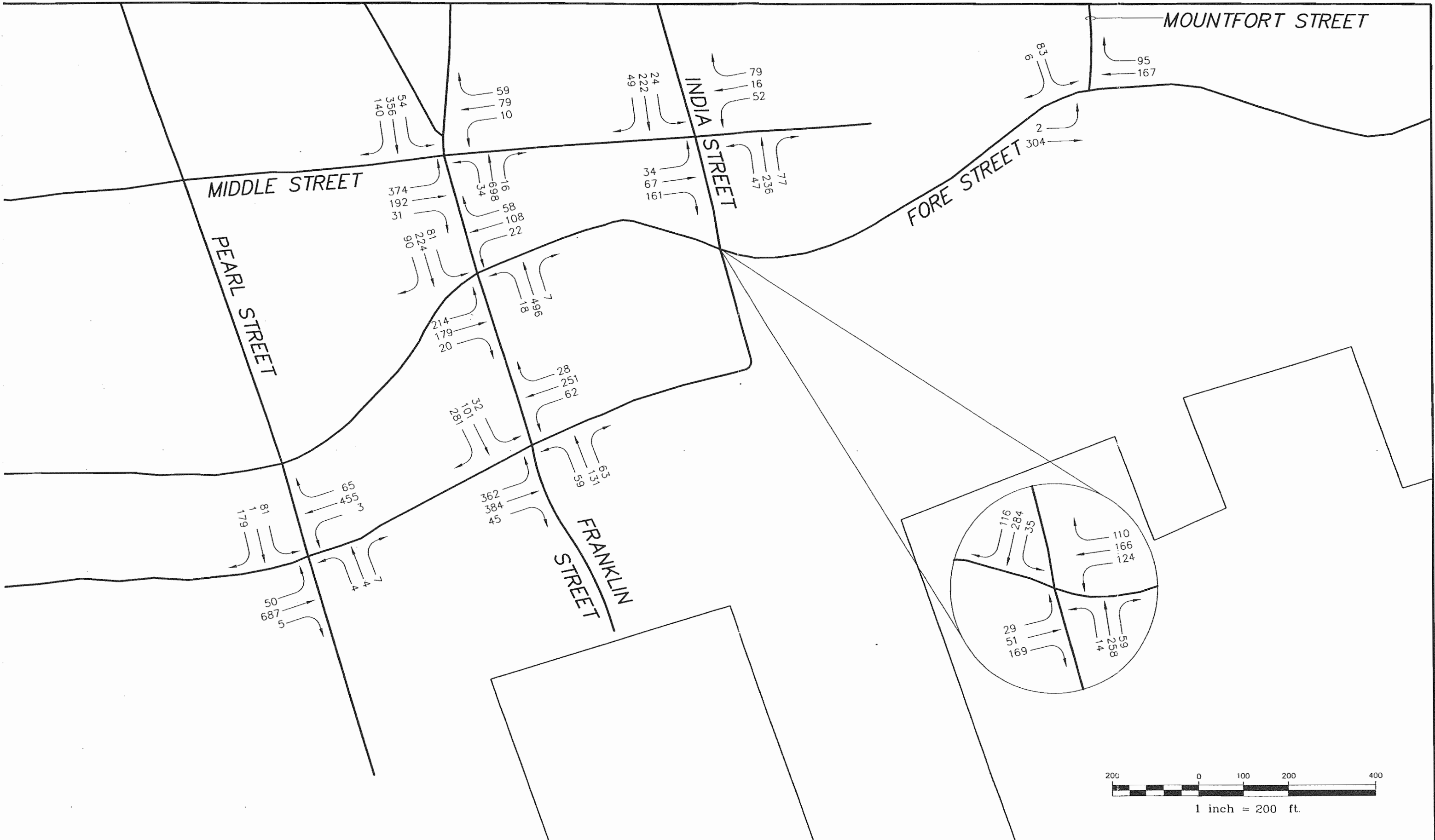
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Drawing Name: **2025 Predevelopment Volumes**

Project: **Waterfront Redevelopment Traffic Study
 Portland, Maine**

Figure No.
2B



Rev.	Date	Revision
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Drawing Name: **2025 Predevelopment Volumes**
 Project: **Waterfront Redevelopment Traffic Study
 Portland, Maine**

Figure No.
20C



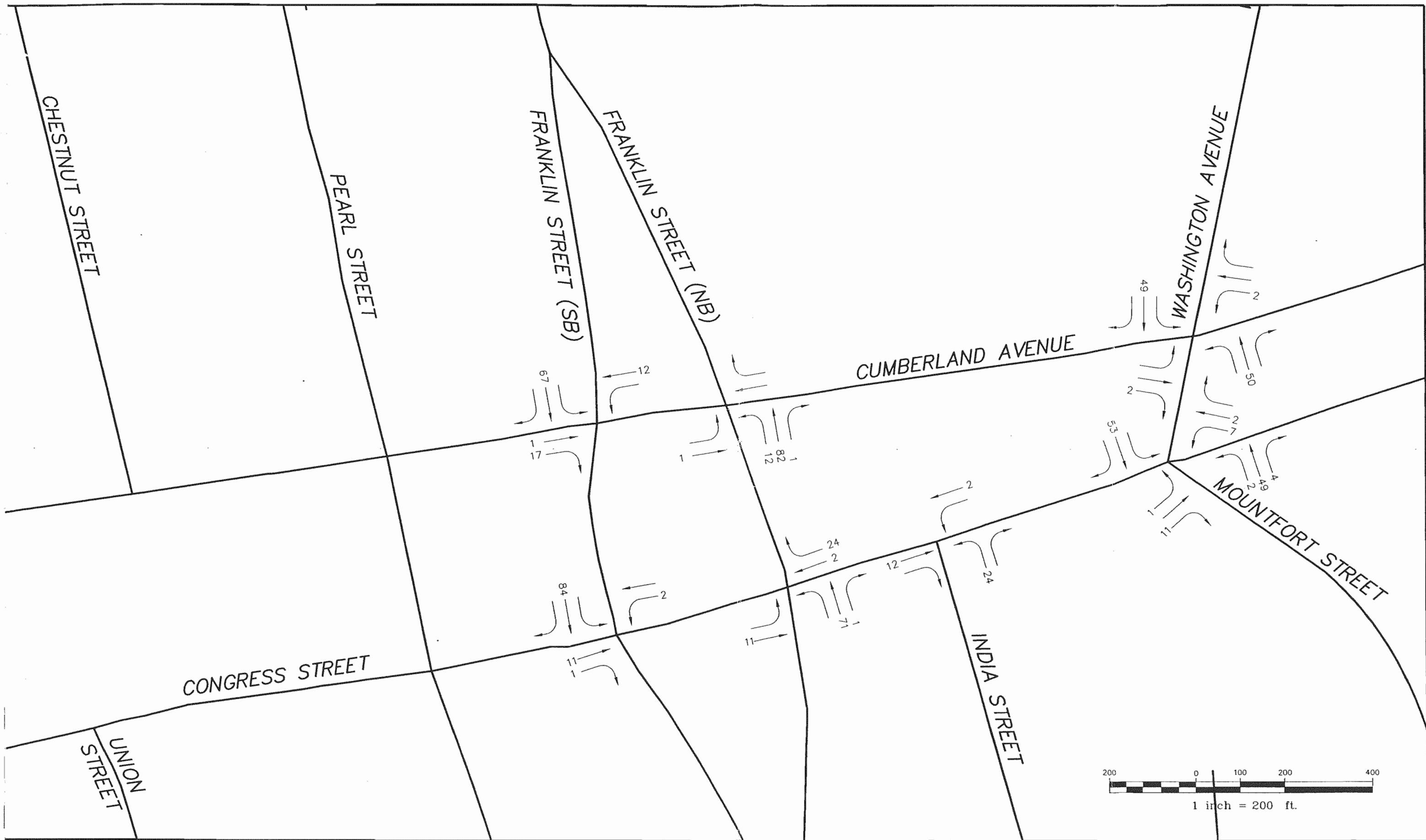
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Drawing Name: 2025 Predevelopment Volumes
 Project: Waterfront Redevelopment Traffic Study
 Portland, Maine

Figure No. **2D**



Design:	JJB	Date:	MARCH 2002
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File Name:	267-2 TRAF.dwg		

Design:	JJB	Date:	MARCH 2002
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Drawing Name: Trip Assignment For Ocean Gateway


Project: Waterfront Redevelopment Traffic Study
 Portland, Maine

Figure No.
3B



Rev.	Date	Revision
-	-	-
-	-	-

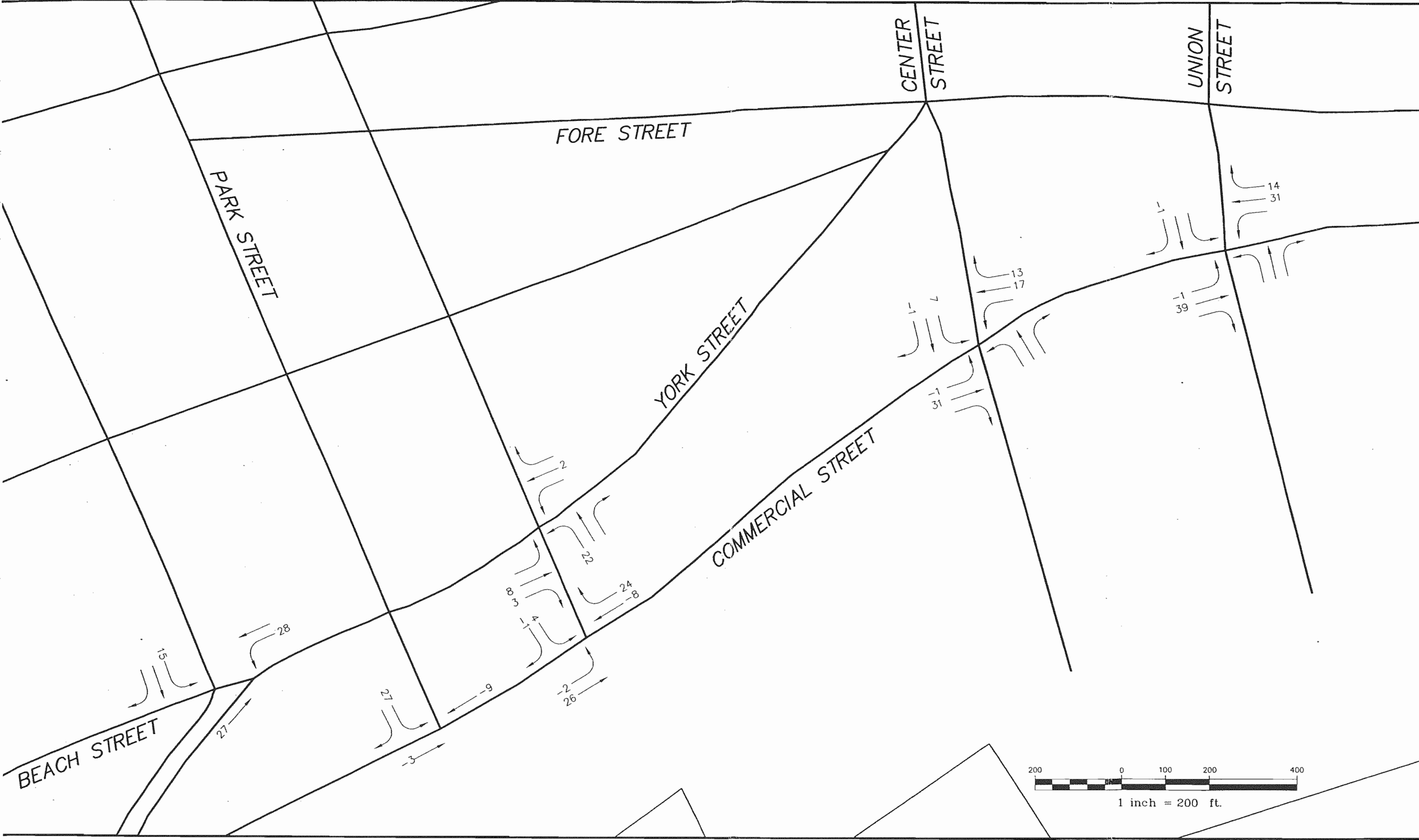
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Drawing Name: **Trip Assignment For Ocean Gateway**
 Project: **Waterfront Redevelopment Traffic Study**
 Portland, Maine

Figure No. **3C**



Rev.	Date	Revision

Design: JJB	Date: MARCH 2002
Draft: RDS	Job No.: 267.2
Checked: TLG	Scale: 1"=200'
File Name: 267-2_TRAF.dwg	

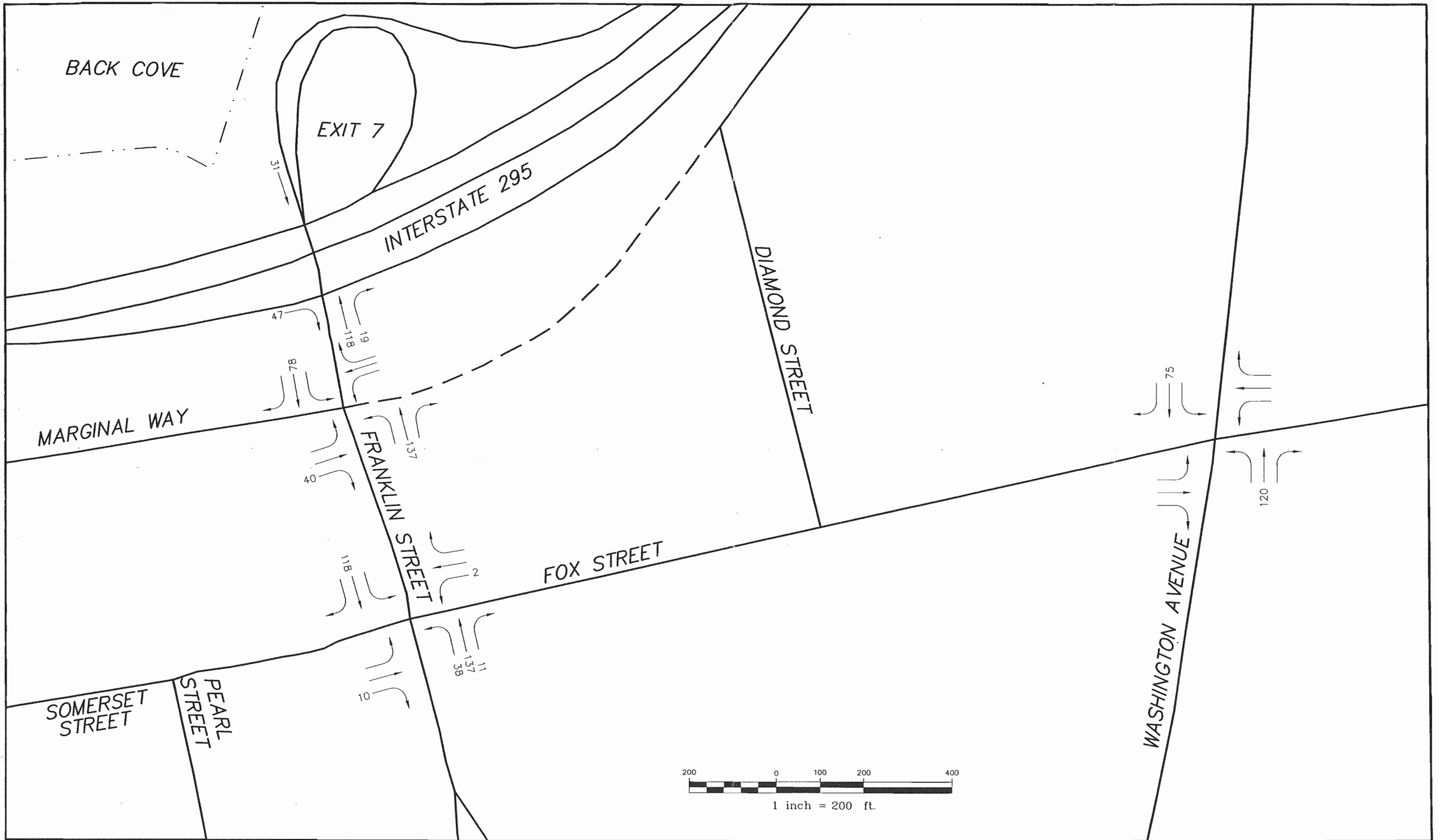
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Drawing Name:	Trip Assignment For Ocean Gateway
Project:	Waterfront Redevelopment Traffic Study Portland, Maine

Figure No.
3D



Rev.	Date	Revision

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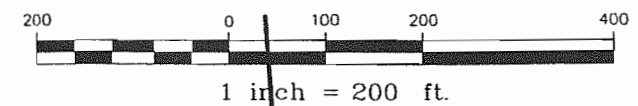
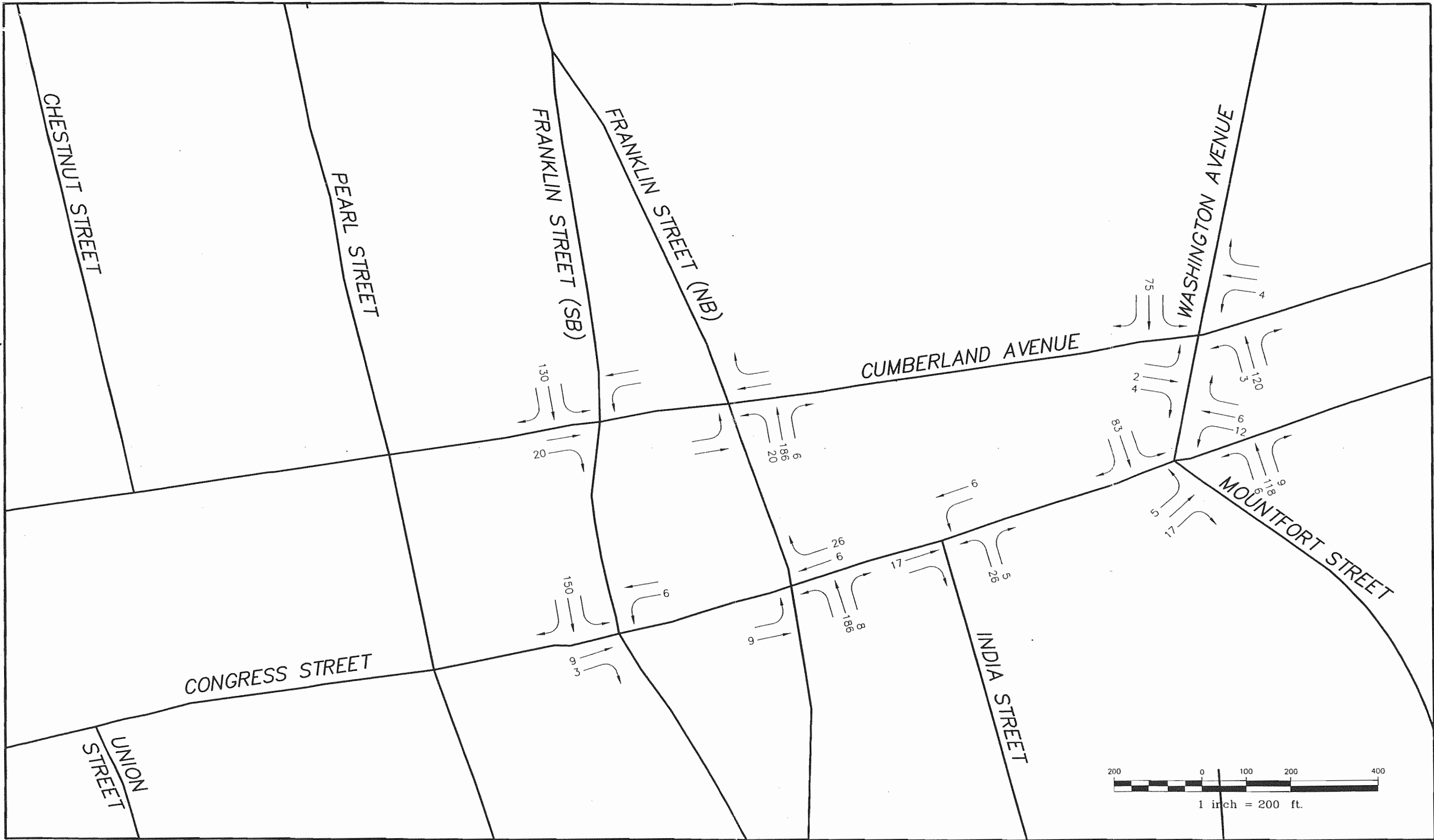
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Drawing Name: Trip Assignment From Combined Projects

Project: Waterfront Redevelopment Traffic Study
 Portland, Maine

Figure No.
4A



Rev.	Date	Revision

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Drawing Name: **Trip Assignment From Combined Projects**

Project: **Waterfront Redevelopment Traffic Study
 Portland, Maine**

Figure No.
4B