

TRANSPORTATION

Attached are summaries of corridor/issue area improvement concepts that have been developed in response to direction from the Planning Committee (at its 5/12/98 meeting). Summaries were prepared for the following "projects:"

- Westlake Landscaped Boulevard
- Denny/Aurora/Dexter Interchange-Intersection Improvements
- Stewart/Denny/Yale/Howell/southbound I-5 Interchange-Intersection Improvements
- Pedestrian Improvements on Arterials (Boren, Stewart, Howell, Olive, Denny, 6th, 7th, Virginia)
- Bicycle System Improvements
- Transit Facilities and Service Improvements
- Car-Sharing Program
- Free metered street parking for electric car.

Westlake "Boulevard"

An integral element of the comprehensive land use and transportation plan for the Denny Triangle neighborhood is the conversion of Westlake Avenue to a landscaped boulevard. The boulevard concept was developed to meet both urban design/streetscape and traffic operation/circulation requirements. Because Westlake Avenue will remain a primary traffic artery into and

out of downtown, the boulevard design will need to facilitate smooth traffic flow. At the same time, because Westlake Avenue cuts directly through the Denny Triangle neighborhood and across its street network, the boulevard design also must modify side-street and cross-street connections, revise traffic control (e.g., channelization, signalization), and improve the safety and convenience of pedestrian movement along and across the street throughout the corridor.

Objectives / Issues to be Addressed:

- Integrate Westlake Avenue into the neighborhood physically, aesthetically, and operationally, while maintaining its arterial functions at an adequate level.
- Improve pedestrian and bicycle safety and convenience along and across the Westlake Avenue corridor.
- Identify side-street closures and traffic calming and traffic management measures to ensure that Westlake traffic operates at appropriate speeds and that an adequate level of local access/circulation onto and across Westlake Avenue can be maintained for neighborhood traffic (auto, bicycle, and pedestrian); identify locations for curb bulbs, mid-block refuges and medians, curb ramps, pedestrian signals, and other traffic calming and pedestrian safety devices and crossings
- Improve operations, safety, and aesthetics at the various multiple-side/cross-street, oblique-angle, exces-

sively wide, and otherwise "non-standard" intersections along the Westlake Avenue corridor.

- Develop a side-street closure and traffic calming/management plan that supports/complements the neighborhood land use plan for the areas surrounding Westlake Avenue.

Recommendations:

1. Reconstruct Westlake Avenue as a landscaped boulevard:

- Provide two travel lanes in each direction separated by a raised landscaped median, with left turn lanes and/or U-turn lanes, and retaining on-street parking and bus zones; consider bicycle lanes
- Close or realign side-streets and cross-streets as necessary to maintain traffic operations on Westlake and to establish the neighborhood traffic circulation patterns envisioned/required by the land use plan.
- Improve bus stops and pedestrian crossings by installing painted crosswalks, curb bulbs, pedestrian median refuges, and pedestrian signals as appropriate.
- At the more expansive, 6-legged Westlake intersections – e.g., 7th/Virginia, 8th/Lenora, and possibly 9th/Blanchard – consider the "modern roundabout" concept (not to be confused with the small traffic calming "traffic circles" that are

being installed by the dozens on local streets) for intersection design/traffic control.

2. Reconfigure "non-standard" Westlake Avenue intersections to better accommodate pedestrian traffic via landscaped unused street right-of-way and islands.

Project Development: Next Steps:

1. Specify type and location of pedestrian improvements.

2. Specify type and location of street, traffic control, and landscape improvements for the "non-standard" intersection.

3. Prepare complete conceptual plan for recommended corridor improvements.

4. Prepare initial traffic operational analysis for boulevard concept.

5. Initiate conceptual planning process for recommended Westlake Avenue Corridor improvements:

- Establish project team: Identify project team members, including City agencies, community representatives, and as necessary other agencies

- SEATRAN

- Citizen Advisory Committee or Task Force (to review technical analysis results and provide direction for the planning and design activities of the project development process)

- KC Metro Transit

- Define the scope of work and schedule for conceptual planning/design phase of project development

- Determine cost and identify funding source(s) for conceptual planning/design work

6. Prepare complete conceptual plan for recommended Westlake Avenue Corridor improvements:

- Prepare technical analyses, including (as needed) origin-destination studies and traffic capacity and operational analyses

- Identify side-street closures and realignments, and specify lane configuration, channelization, and traffic control improvements needed at key intersections

- Analyze/evaluate alternatives, and select preferred alternative(s) for design and implementation

Transit Service and Facilities

Problem Statement:

Although many buses pass through the Denny Triangle, the service is not easily accessible and does not serve well the travel needs of neighborhood residents.

Many bus routes serve the Denny Triangle neighborhood while passing through enroute to/from downtown. Although the bus service in the Denny Triangle provides good access to downtown and an eclectic mix of suburban and north end areas (via the Westlake/Dexter routes and the routes that use Stewart/Howell or the Transit Tunnel), convenient

transit connections within the neighborhood and to nearby destinations –the Denny Regrade, Seattle Center, First Hill, etc. – do not exist.

The Denny Triangle Neighborhood relies heavily on transit service. Transit is a critical element of the transportation system that provides internal and external access and mobility for current and future neighborhood residents and office employees. Because the street system has nowhere near the capacity needed to accommodate traffic generated by forecasted neighborhood population and employment growth, it is imperative that residents' need to own and use autos and employees' need to commute in autos be minimized. For this reason it is critical to the future health and vitality of the neighborhood and its residents and businesses to maintain and improve Denny Triangle transit service.

Objectives / Issues to be Addressed:

1. Review and evaluate basic route structure serving the neighborhood: identify route revisions needed to better serve existing and planned population and employment

2. Improve the convenience of access and the network connectivity of the transit system

3. Develop alternative modes to provide additional "auto-less" access to Denny Triangle

Recommendations:

1. Improve basic route structure serving the neighborhood:

- Consolidate/clarify routes and available service in the Denny Triangle
- Develop downtown-First Hill-Capitol Hill circulator/shuttle service

2. Improve transit system access and network connectivity:

- Maintain/improve direct connections to/from the Denny Regrade, Seattle Center, South Lake Union, and First Hill
- Identify opportunities for consolidating or relocating bus stops
- Identify locations where shelters and pedestrian safety improvements are needed to serve existing riders
- Identify locations where shelters and pedestrian safety improvements are needed to serve future residential and commercial development

3. Extend downtown free-fare zone to include the Denny Triangle neighborhood.

4. Study alternative modes of transportation to provide additional "auto-less" access to Denny Triangle.

Arterial Corridor Pedestrian Improvements (Stewart Street, Howell Street, Olive Way, Boren Avenue, Denny Way, 6th Avenue, 7th

Avenue, Virginia Street)

Problem Statement:

Traffic operations – congested and uncongested – on the Denny Triangle’s numerous arterial streets reduce the safety and convenience of pedestrian crossings to an unacceptable level. The pervasive limitations placed on free pedestrian circulation by the arterial system as it exists will make it difficult if not impossible for the Denny Triangle neighborhood to support the forecasted population and employment growth.

Due to the Denny Triangle’s proximity to downtown and the fact that numerous downtown access routes pass through it, virtually all Denny Triangle streets are principal or minor arterials. Although the traffic-carrying function of many of these streets is of critical importance to the accessibility of downtown (and to a lesser extent, the South Lake Union and Seattle Center areas), roadway widths and the speed and volume of the traffic make these arterials very difficult for pedestrians to cross. As a result, the arterials have become barriers to safe and convenient pedestrian circulation within the neighborhood. This is a serious problem in the Denny Triangle neighborhood, where free pedestrian circulation to/from transit stops/stations and within and amongst the existing and planned residential areas, the existing and planned office buildings, and neighborhood commercial/retail services is critical not only to the continued vitality and viability of existing neighborhood activity, but also to the basic

ability of the neighborhood to accommodate the population and employment growth forecasted for it.

Purpose and Objectives of Project:

Improve pedestrian safety and convenience along and across the arterials in the Denny Triangle neighborhood: identify locations for curb bulbs, mid-block refuges and medians, curb ramps, pedestrian signals, and other pedestrian safety devices and crossings.

Recommended Improvements/Actions:

Improve pedestrian crossings by installing the following devices, as appropriate, at bus stops, on primary walk routes within and through the neighborhood, and at a spacing of no greater than two blocks elsewhere:

- Paint crosswalks
- Curb bulbs
- Pedestrian median refuges
- Pedestrian signals

Project Development: Next Steps:

1. Specify type and location of pedestrian improvements
2. Prepare complete conceptual plan for recommended corridor improvements

Bicycle Improvements

Bicycling is of significant importance in the Denny Triangle neighborhood. In addition to the

bicycle trips within the neighborhood (e.g., trips between residences and businesses), major bicycle routes to/from downtown pass through the Denny Triangle.

Significant numbers of bicyclists traverse the Denny Triangle neighborhood every day, and improving the safety and convenience of bicycle access and circulation in and through the neighborhood is a high priority.

Objectives / Issues to be Addressed:

Improve safety and convenience of bicycle travel within and through the Denny Triangle neighborhood.

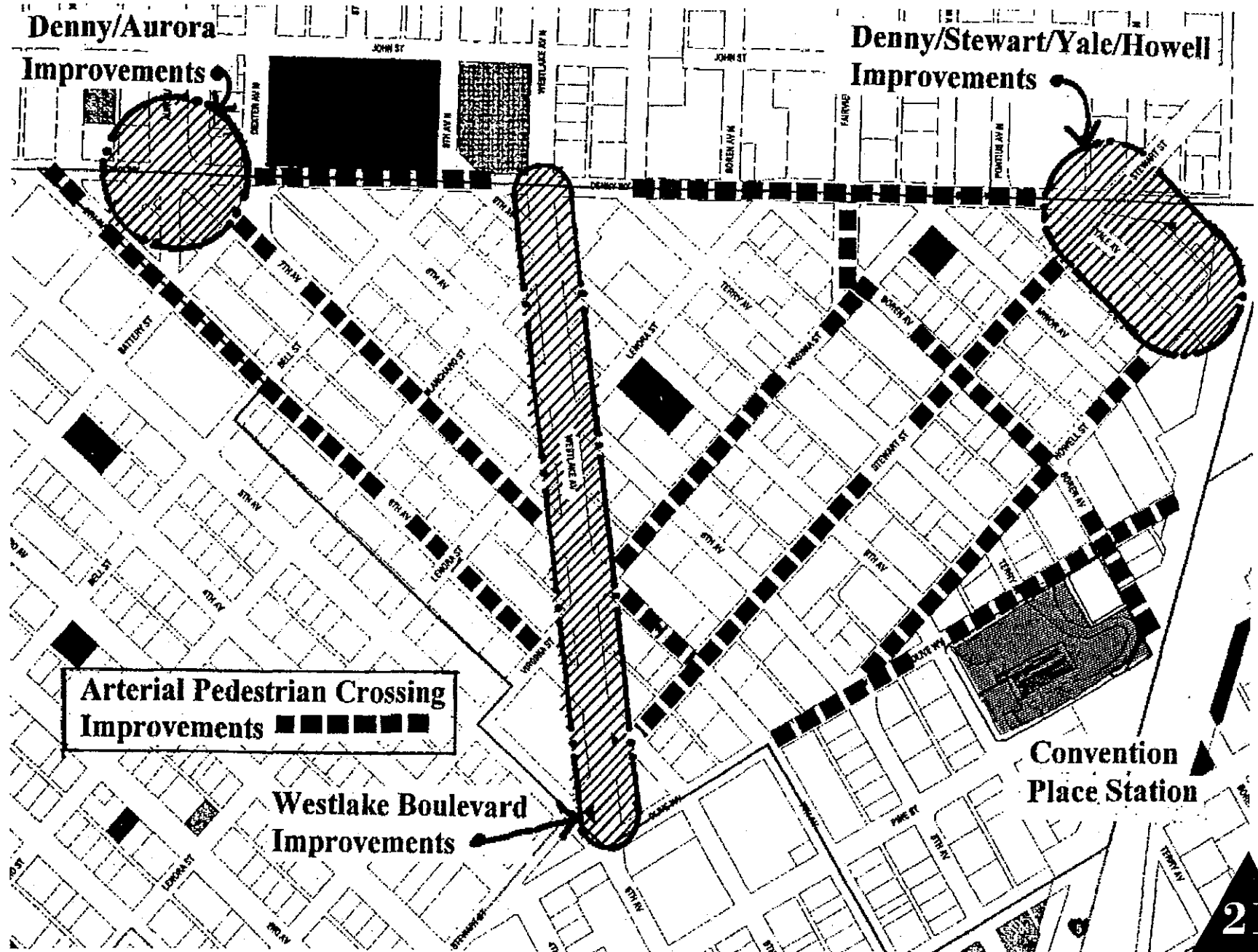
Recommendations:

1. Locate and develop attractive high-capacity bicycle connections ("bike-ways") that are physically separated from auto traffic to the extent possible:

- Downtown – Dexter Avenue
- Downtown – North Westlake Avenue

2. Identify east-west bicycle routes through the neighborhood

Project Development: Next Steps



1. Develop conceptual plans for bikeway connections through the neighborhood to the Dexter Ave and Westlake Avenue bicycle routes.
2. Develop conceptual plans for east-west bicycle connections in the neighborhood.

Car-Sharing

A car-sharing service consists of a group of individuals who share a fleet of cars in much the same way that members of a recreational organization share time-share condos. The vehicle purchase or lease agreements, maintenance, insurance and repair costs are borne by the service. To reserve vehicles, users phone a 24-hour reservation line, then pick up their car at a permanent location convenient to their residence, typically within walking distance. Car-sharing allows individuals to have the benefits of auto use, when needed, without the high fixed costs of car ownership. Users typically pay a one-time membership deposit, plus additional costs, based on the number of hours and/or mileage each time a car is used. Car-sharing promotes auto use as an equal transportation option along with transit, carpooling, bicycling, or walking.

Car-sharing has been operating successfully in several European countries, such as Switzerland and Germany, and in several Canadian cities, including Quebec, Montreal, Victoria and Vancouver, for the past few years. Demonstration programs are now being kicked off in several cities on the West Coast of the U.S., including Portland, Los Angeles and San

Francisco. In each U.S. city, the car sharing service is being implemented with different business structure.

The King County Department of Transportation recently has hired a consultant to prepare a business planning and development study to recommend options for setting up a one-year car-sharing demonstration program in one or more Seattle neighborhoods (First Hill/Capitol Hill, Denny Regrade/Lower Queen Anne, University District/Wallingford) by Fall, 1998.

Objectives / Issues to be Addressed:

Promote transportation options and develop institutions that reduce auto traffic and parking requirements by reducing neighborhood residents' reliance on ownership and operation of personal autos.

Recommendations:

The City shall study the development of a car-sharing program for current and future Denny Triangle residents. The program would be modeled after a non-profit, cooperative enterprise. This program is not intended to be funded by development.

Denny Way/Aurora Avenue/Dexter Avenue: Intersection – Interchange Improvements

Problem Statement:

The Denny Way/Aurora Ave and Denny Way/Dexter Avenue intersections form a major bottleneck on Denny Way, backing up traffic along Denny Way and blocking/delaying access and circulation along the

north side of the Denny Triangle neighborhood.

Denny Way is classified as a Principal Arterial, and provides a primary connection between Capitol Hill, I-5, Seattle Center, the waterfront, and the various north-south arterials west of I-5 (Fairview Avenue, Westlake Avenue, Dexter Avenue, Aurora Avenue, Broad Street, Queen Anne Avenue, and 15th Avenue). Denny Way is a key link in the street system serving not only the Denny Triangle neighborhood, but also the South Lake Union, Cascade, Denny Regrade, and Queen Anne neighborhoods as well.

The Denny Way/Aurora Avenue interchange area encompasses three closely-spaced intersections on Denny midway between I-5 and the waterfront: south-bound Aurora off-ramp/Wall Street, north-bound Aurora on-ramp/Battery Street, and Dexter Avenue. Severe congestion at these intersections occurs during the weekday a.m. and p.m. peak periods, on weekends, midday, and anytime there is a major event at the Seattle Center. This frequent congestion on Denny Way restricts neighborhood access and circulation and impacts the residential and commercial viability of adjacent and nearby land uses.

Objectives / Issues to be Addressed:

Develop conceptual plans to fix the Denny/Aurora Interchange traffic bottlenecks, and to route traffic around – rather than through – key portions of the neighborhood.

Recommendations:

Develop a set of intersection improvements to relieve the Denny/Aurora bottleneck:

- Consider the applicability and utility of a full range of potential improvements/actions, including but not limited to the following: eliminate southbound through movements from Aurora onto Wall St (or close Wall south of Denny); prohibit left turns from southbound Aurora onto eastbound Denny (e.g., by reroute this traffic via Wall, 8th, and Battery); reconfigure southbound Aurora to provide two left turn lanes; install left turn pockets on Denny at Dexter; shift Denny/Aurora-Wall intersection east and merge it with the Denny/Battery-Aurora intersection; completely redesign and rebuild intersections.
- Coordinate/consolidate interchange-intersection improvements with Denny Triangle "gateway" urban design and open space concepts (the gateway and intersection concepts should be developed jointly).

Project Development: Next Steps:

1. Initiate conceptual planning process for recommended Denny/Aurora Interchange Area improvements:

- Establish project team: Identify project team members, including City agencies, community representatives, and as necessary other agencies

SEATRAN

- Citizen Advisory Committee or Task Force (to review technical analysis results and provide direction for the planning and design activities of the project development process)
- WSDOT
- KC Metro Transit

• Define the scope of work and schedule for conceptual planning/design phase of project development

• Determine cost and identify funding source(s) for conceptual planning/design work

2. Prepare complete conceptual plan for recommended Denny/Aurora Interchange Area improvements:

• Prepare technical analyses, including (as needed) origin-destination studies and traffic capacity and operational analyses

• Develop conceptual alternatives that address the identified Denny/Aurora/Dexter congestion problems; specify lane configuration, channelization, and traffic control improvements on key street segments and at key intersections, Aurora Ave ramp modifications, and HOV lane and bus zone requirements

• Analyze/evaluate alternatives, and select preferred alternative(s) for design and implementation

Denny Way/Stewart Street & Yale Avenue/Howell Street/Southbound I-5 Intersection-Interchange Improvements

Problem Statement:

The Howell Street/Yale Avenue/Southbound I-5 on-ramp intersection – in conjunction with the Stewart Street/Yale Avenue and Denny Way/Stewart Street intersections – creates a bottleneck on two major I-5 and downtown access routes through the Denny Triangle neighborhood. This bottleneck and the queues it creates severely restricts access and circulation throughout the Denny Triangle neighborhood.

Denny Way is classified as a Principal Arterial, and provides a primary connection between Capitol Hill, I-5, Seattle Center, the waterfront, and the various north-south arterials west of I-5 (Fairview Avenue, Westlake Avenue, Dexter Avenue, Aurora Avenue, Broad Street, Queen Anne Avenue, and 15th Avenue). Denny Way is a key link in the street system serving not only the Denny Triangle neighborhood, but also the South Lake Union, Cascade, Denny Regrade, and Queen Anne neighborhoods as well. Stewart Street and Howell Street form a one-way couplet linking the I-5 Reversible Express Roadway and Denny Way to downtown (Stewart inbound, Howell outbound); both are classified as a Principal Arterials.

During peak and midday periods, eastbound (southbound I-5-bound) traffic queues back from Yale/Howell on Denny Way sometimes as far west as Fairview Ave, and during the afternoon peak period northbound traffic on Howell backs up all the way to Olive Way in downtown. This bottle-

neck and the queues it creates severely restricted access and circulation throughout the Denny Triangle neighborhood.

Objectives / Issues to be Addressed:

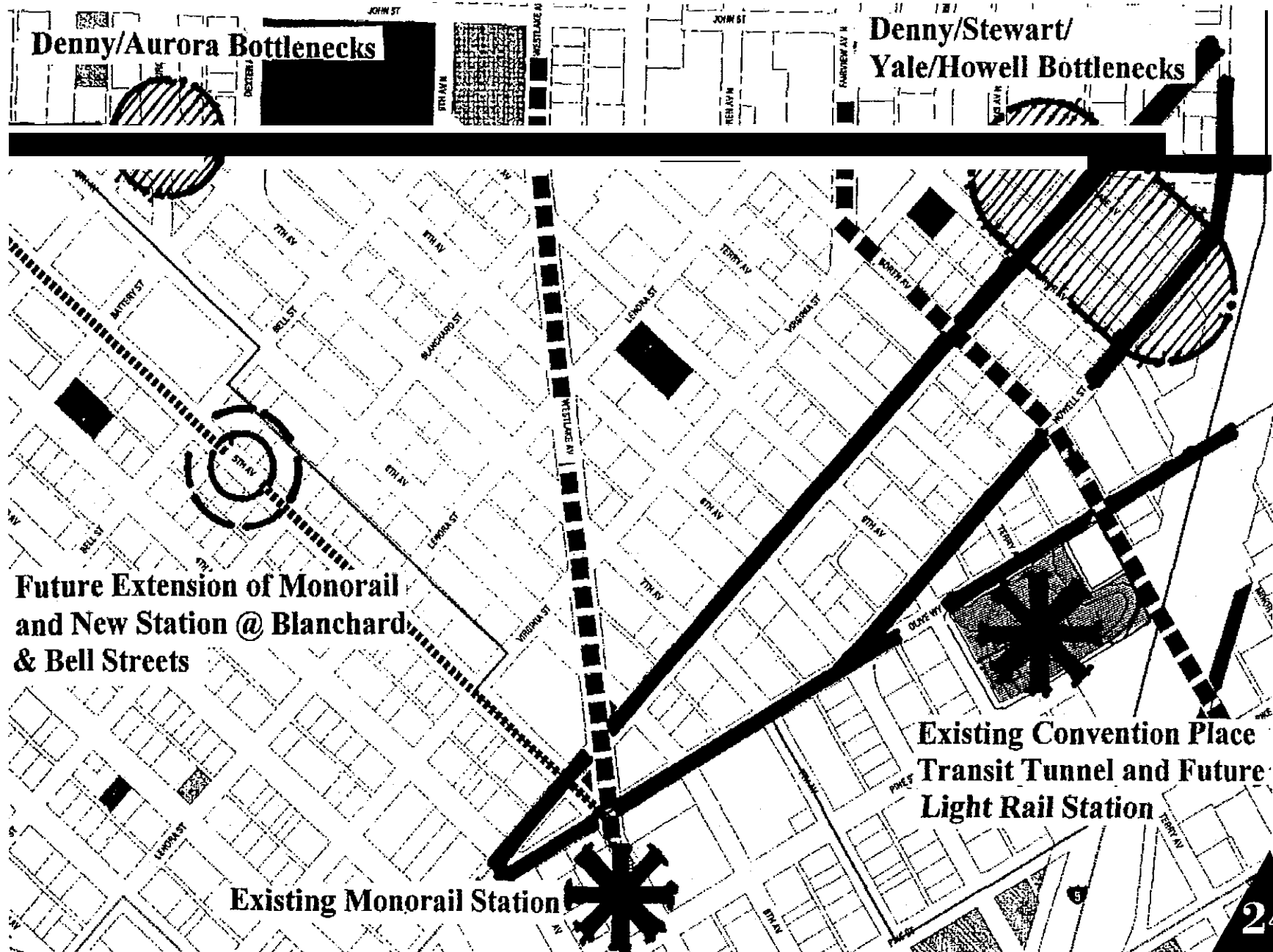
Develop conceptual plans to fix the Denny/Stewart/Yale/Howell intersection(s) traffic bottlenecks.

Recommendations:

Develop a set of intersection and freeway ramp improvements to relieve the Yale/Howell/ Southbound I-5 bottleneck and Denny/Stewart and Stewart/Yale congestion. Consider the applicability and utility of a full range of potential improvements/actions, including but not limited to the following:

- Signal timing modifications and optimization
- Channelization and lane configuration modifications
- Grade separation (e.g., previously-proposed Stewart/Denny overpass)
- Freeway ramp improvements

Project Development: Next Steps:



1. Initiate conceptual planning process for recommended Denny Way/Stewart Street/Yale Avenue/Howell/I-5 Intersection-Interchange Area improvements:

- Establish project team: Identify project team members, including City agencies, community representatives, and as necessary other agencies

- SEATRAN

- Citizen Advisory Committee or Task Force (to review technical analysis results and provide direction for the planning and design

activities of the project development process)

- WSDOT

- KC Metro Transit

- Define the scope of work and schedule for conceptual planning/design phase of project development

- Determine cost and identify funding source(s) for conceptual planning/design work

2. Prepare complete conceptual plan for recommended Denny Way/Stewart Street/Yale Avenue/Howell Street/Southbound I-5 Intersection-Interchange Area improvements:

- Prepare technical analyses, including origin-destination studies and traffic capacity and operational analyses (including simulation of the multi-intersection study area street system)

- Develop conceptual alternatives that address the identified Denny/Stewart, Stewart/Yale, and Yale/Howell congestion problems; specify lane configuration, channelization, and traffic control improvements on key street segments and at key intersections, I-5 ramp modifications, and HOV lane and bus zone requirements



The TRIANGLE

**DENNY TRIANGLE
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