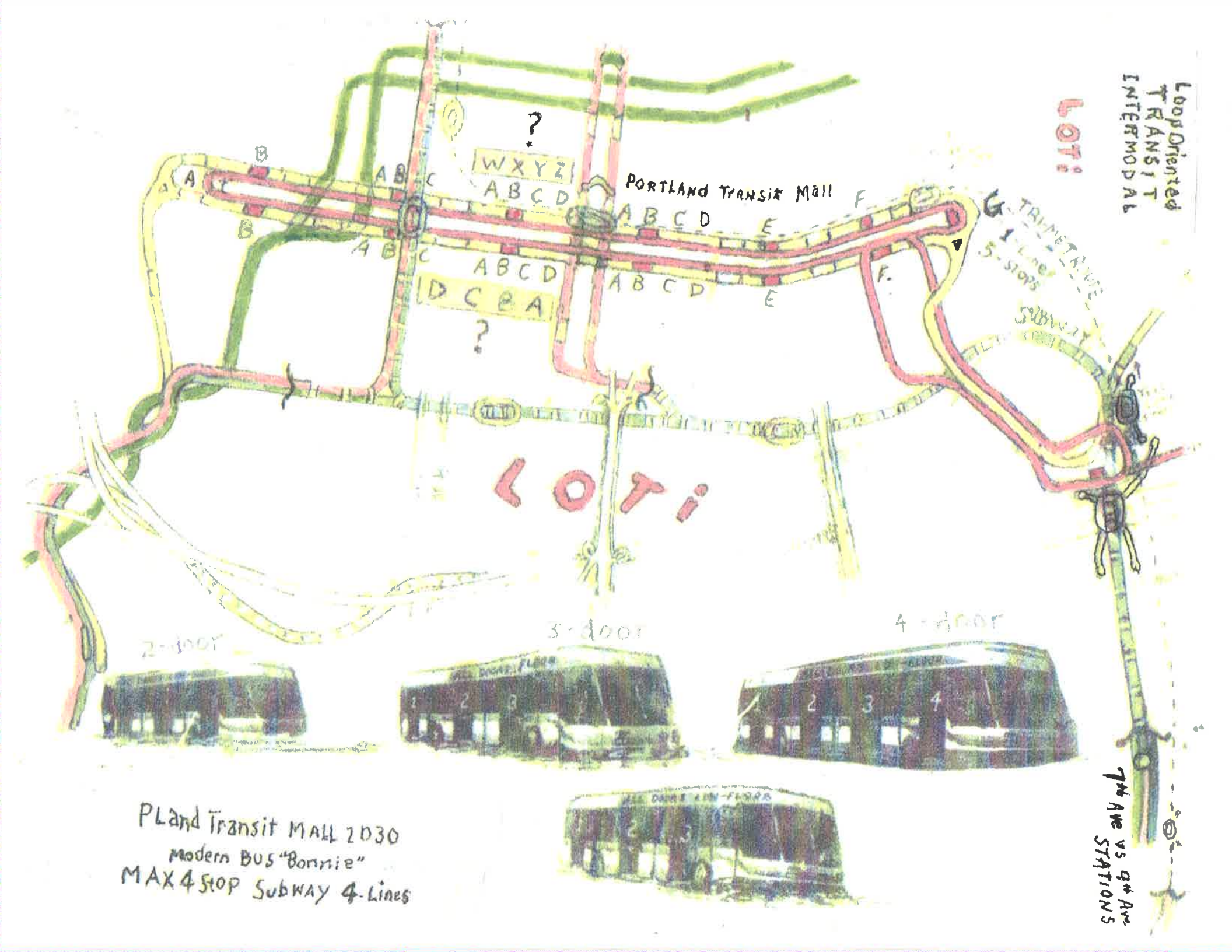


PLand Transit MALL 2030
Modern BUS "Bonnie"
MAX 4 Stop Subway 4-Lines

The Walking Communities of 2040" (edited March 2024)

The original essay with this title was penned in 1997 to grace the back cover of a transit proposal submitted to Portland City Council where it received a formal review and was awarded merit. Twenty years later with significant progress achieved in light rail projects nationally, mass transit still fails to address ever growing traffic woes nor soothe environmental nightmares predicted with global warming. As today's divestment in fossil fuel movement builds momentum, I remain certain that mass transit must receive redirected investment dollars. I am just as certain that self-driving car technology is a fraudulent ruse meant to distract public attention from actual solutions that include truly modern mass transit as a fundamental travel mode with the most potential to direct development beyond car dependency and traffic havoc.

The transit proposal is based on a design concept dubbed LOTi (Loop Oriented Transit Intermodal). Sometimes I refer to it as sort of missing link. Its closest model is Denver's 16th Street Shuttle. The design application writ broadly is meant to reduce the cost and impact of light rail and transit centers; streamline both light rail and peripheral bus lines by avoiding circuitous routing; provide convenient transfers rail to bus and between bus lines with the least number of any suitable transit vehicle; and to offer much more potential for transit-oriented infill mixed-use development.

The basic flaws of self-driving cars are simple enough. Their technological hurdles are plainly unsurmountable. They will never be completely safe. They won't decrease traffic congestion, fuel/energy consumption nor emissions sufficient to prevent worst harm from catastrophic climate change. They are most unlikely to reduce travel-related cost of living. They won't take full advantage of the benefits EVs offer, and the technology is supported for all the wrong reasons; to bust transit operator and teamster unions; to give freeway planners an excuse to predict worsening traffic can be managed with reckless tailgating; to maintain most profitable but least resilient regional utility grids despite decentralized EV+PV household power systems a proven ideal.

The most telling aspect of self-driving car folly is eliminating ownership whereupon all cars are kept in central garage locations and dispatched on demand. Never mind that in a grid failure, every household with an EV in the garage gains a backup power supply. Never mind any emergency where a car is needed immediately, not one that may arrive too late. Self-driving car tech completely denies those safety features and pretends 'mass tailgating' won't produce horrific multi-car pileups. Self-driving tech in many ways puts safety dead last.

A household EV offers the means to more closely monitor and reduce energy consumption overall, both for driving and household use. Rooftop PV solar arrays are thee perfect match to EV battery packs. Perhaps most important, a household EV is an incentive to drive less, whereby more trips become possible without having to drive, whereby local economies grow and alternate modes of travel - mass transit, walking and bicycling - all more energy efficient than EVs alone - may serve more travel needs in this vision of walking communities in 2040. It's last line, "Look, there's a gas station. You don't see too many them no more."

The Walking Communities of 2040 Part II
(BEV.vs PHEV vs HFCEV tech)

Indifferent reviews of the Walking Communities essay I'll accept but question whether disinterest is due solely to its flat rejection of autonomous vehicle tech. If a compromise position on AV tech were fairly heard, might the essay get a more favorable review? Here then is a compromise position: Most safety features AV tech offers (sans tailgating) are possible at Level 3 "driver assist" which could more sensibly prevent tailgating. AV tech at Level 5 "driverless" loses safety features of the driver's constant attention to roadway conditions and ability to maneuver to avoid accidents. A critically important Level 3 safety feature could prevent speeding; motorists may drive slower, but not faster than posted speed limits, nor too fast through busy intersections speeding to beat the light. A good rule of thumb for safer speeds through intersections is "Reduce speed through intersections FIVE mph less than posted speed limit."

Dismissal of the essay wasn't unexpected. My intention from the start was to write a series of follow up articles to deal with related issues separately in more detail to clarify the case for each. Part II about EV potential. Part III about public transit. Part IV about land-use development concerns plus the essay summary. Part V would open a venue for futurists to present their dazzling or dizzying visions of future beyond 2040. Fortunately for critics, Parts II, III and IV will be as unavoidably provocative as the initial Walking Communities essay.

I propose a provocative public debate to discuss this question: Which of the 3 basic EV drivetrains (BEV vs PHEV vs HFCEV) offers most benefits, applications and potential to reduce fuel/energy consumption, emissions AND insane traffic? All professed EV experts are invited to dispute my adamant contention that the correct answer is PHEV plug-in hybrid to serve 65% EV needs while BEV serves the remainding 35% in mostly lightweight vehicles and short distance trips, hydrogen fuel cell HFCEV tech less than 1% if that. The under-appreciated advantages PHEV tech offers include more ideal applications for "combustible" hydrogen which stores at lower pressures in smaller-safer tanks, meters more reliably into PHEV+H drivetrains and deliver at least twice the equivalent MPG possible with fuel cell HFCEV tech.

It's important to note how PHEV tech enables the broadest distribution of limited resources in more manageable quantities. PHEV tech would serve more household solar rooftop arrays & neighborhood mini-grids. Once depleted, PHEV packs can extend use several years as Low-power household supply. Not near as simple with larger worn out BEV packs that are also more expensive to replace.
Here's a basic battery resource distribution chart:
'1' BEV freight truck pack of 500kwh (5 packs in 10 years),
'20' BEV delivery van packs of 150kwh (2 packs in 10 years),
'30' BEV Tesla 'S' sedan packs of 85kwh,
"140" PHEV Chevy Volt class packs of 18kwh,
"500" PHEV Prius class packs of 5kwh
(all sedan packs last 10 years)

PHEV tech is especially applicable to long haul freight trucks. Due to quick charge and discharge, huge 500kwh BEV freight truck packs offer around 150k-200k miles of goods transport before depletion and replacement. Divide the large (500kwh) BEV pack into 5 smaller (100kwh) PHEV packs as "light duty" deliver closer to 200k miles each before replacement. Thus, '5' PHEV truck packs could deliver 1 Million miles of goods transport vs a mere 150k miles with '1' BEV long haul semi truck pack, inexcusable waste.

The Walking Communities essay Part II questions which tech is the more productive investment: Big Battery BEV tech (alone or with) Small battery PHEV+H tech? Part II highlights benefits PHEVs offer yet to be thoroughly considered. Perhaps most important, advantages PHEV tech offers address the larger problem of impossibly excessive vehicle use. We drive too much for too many purposes. We truck and ship goods through neighborhoods across metropolis, states and between nations much too far.

LotiLivo @ gmail.com

The Walking Communities of 2040 Part III
(a new direction for public transit)

The Walking Communities essay Part III begins with the admission that Covid-19 pandemic presents a grave concern for the future of public transit. When will riding a bus or train be less vulnerable to the spread of contagion? These principal health concerns are addressed in the LOTi transit design theory.

The LOTi Project calls for entire fleet replacement of standard 40' municipal buses only suitable for rush hours on limited stop routes. They do not convert to EV very well nor do their counterpart Yellow School Bus and GM/Ford paratransit lift van fleets. The LOTi design concept directly addresses these sanitation concerns by replacing the common GM/Ford type paratransit lift-van models that have served poorly since the 1970's.

Of the 3 bus types, paratransit lift-van fleets are 'most' in need of replacement. New model paratransit lift-van in 15- 20- 30-passenger wheelbase lengths would come in easy boarding Low-floor Low-emission EV drivetrains seniors, disabled, children and all transit patrons need. Battery pack weight properly located in the floor for low center of gravity, improved handling and stability for a more comfortable, safer ride that is impossible with mere conversions of obsolete chassis/suspension.

Here follows a few ways to address the spread of infection that new bus models would employ. Current buses are quite clammy in wet weather when floors remain damp and windows fogged. Seating is arranged for maximum capacity with little regard for social distancing. Year round they're either too hot or too cold. Interior overhead lighting that is either too bright or not bright enough. They should have a window and all windows clear rather than darkened. Heating and air conditioning redesigned to maximize comfort and minimize spread of bacteria.

The LOTi proposal advises major alterations to bus route arrangements to consider. The "L" in the acronym LOTi denotes their purpose as short-line Loops that would make transfers bus-to-rail and between bus lines, with the least number of LOTi buses through busy neighborhood districts with convenient transfer wait periods of less than 5-min.

New Light rail stations can avoid objectionable impacts and prohibitively expensive routes by relying on this sort of LOTi transfer to serve important destinations and to direct pedestrian-friendly development. Transit centers with a single LOTi Loop or two can replace a dozen radial bus routes with much longer wait periods. Redirected streamlined bus routes need only cross a LOTi and in passing reduce duplicative bus service leading to transit centers. Here's my theory: Two convenient transfers make a more effective system than One inconvenient transfer on various bus route to transit center arrangements.

Written before the 2020 pandemic, the premise of the Walking Communities of 2040 essay remains an incontrovertible necessity for public transit to become a travel option more people can safely rely on regularly or occasionally to serve their travel needs.

The Walking Communities of 2040

Portland in the year 2040

At the turn of the century, leaders finally realized it was necessary to reduce the need for automobile use. In the year 2040 we have learned to adapt to restrictions placed upon driving them. Communities allow redevelopments that create the essential mixed-uses into their neighborhoods. If, within a district, no opportunities for retail or employment are within walking distances, new zoning codes allow their creation. From the most appropriate building, whatever that might be, needed uses redeveloped; a house becomes a school, or a store, or a diner; an office becomes a clinic or a bunkhouse. Some houses are actually moved for pedestrian connections, or for open space or for farming. A cinder-block building has broken the rule of unsightlyness. A demolish & salvage festival is held. We all must be there for the fun.

The most dramatic redevelopments are the asphault districts. So few automobiles are actually driven, they are the most in need of rehabilitation and people eagerly support their reconstruction. They are used for purposes other than driving on.

Central gathering places in these walking communities of 2040 are served with electric mass transit. Rail systems are commonplace and are often built upon unused freeway segments. Neighborly transit vehicles which connect to the rail system are smaller, slower and fareless.

Some old roads still exist. Some are removed. Communities are still accessible by tired vehicles, but most people prefer to walk.

Long distance travel by air is very expensive. Regional travel by train is more common. Hospitality towards train-traveling vacationers is not to be missed.

The economic structure of life in 2040 is very local. Supporting mass transit supports a local economy. Big Box retailers have become distributors to neighborhood merchants. Neighborhood merchants have greater control over suppliers and opt to sell locally produced goods. The global economy went local, globally.

While traveling on the transit system, old folk enjoy repeating a coloquial saying, "Look, there's a gas station. You don't see too many of them anymore."

Brief description of the 14-page pamphlet

Pages 1 thru 4. The Gemstone Bridge. The first 4 years of the Columbia River Crossing (CRC) I-5 Bridge Replacement Project (2004-2008) studied mostly 'single-deck' design. In 2008, 'double-deck' became the CRC Commission choice for eventual approval. In 2011, the first double-deck design (bottom of page 1) was released and in peer review determined to be "structurally unsound" - (like balancing a bowling ball on a golf tee). The next 2 years, 3 designs followed, all widely considered structurally unsound nor could they meet Coast Guard mandate for minimum river clearance. Page 2 shows ODOT's 2010 excellent Marine Drive Interchange and Concept #1 Off-Island Access to Hayden Island. Commission leader Wsdot tried to defer the interchange (though constructed first and most needing replacement). Wsdot also rejected ODOT's Concept #1. Wsdot's preference (top of page 4) is a horrible design. Pages 3 & 4 show a design for Hayden Island finished in 2015, much safer and less impact with the Gemstone Bridge single-deck design. The above-deck arch "gem" signals the shipping channel and adds about 5' of river clearance.

Pages 5 thru 7. The I-5 Marquam Bridge in Portland's south waterfront has another estimated 30 years before replacement is necessary. Because a tunnel is popularly proposed as a replacement (nonsense), this is a comparison study of double-deck vs single-deck bridges. The 4 paired piers proposed are varied length spans: a longest central span, a medium length westside span, and a least length eastside span to serve unpowered watercraft, kayaks and canoes. An aerial view on page 12 shows this replacement bridge 'downriver' from the old Marquam Bridge. Pages 6 & 7 show westside ramp relocation proposals and ODOT's proposed ramp design between Ross Island Bridge and I-405 which would make the Ross more resistant to earthquake damage and divert excessive surface street traffic onto I-405. Page 8 also shows this ODOT ramp proposal along with my own select 'capping' of I-405 in Portland's "Bridge the Divide" project.

Page 9. My realignment of I-5 on the eastbank of the Willamette River to minimize impact to the popular Esplanade river walk. Some traffic on Grand Ave headed to Hwy 84 (north of Morrison) is also diverted off Grand to this new entrance.

Page 10. Early design for a MAX subway, least length, least cost, least disruptive to construct, following the Halliday Street route.

Page 11. The LOTi Project. This is my "missing link" in transit design. City Hall gave it a fair review in 1997 and was awarded "merit." This current 2015 version, post Green Line, includes an intuitive alphabetical designation of transit stops on the transit mall.

Pages 12 & 13. This shows a LOTi extension through the Rose Quarter and Lloyd District on the eastside, streetcar lines on Burnside and from Lloyd District to Hollywood. Also shown is the complete MAX subway extension proposal, an eastside subway route via Multnomah Blvd, and regional MAX extensions. Page 13 shows AORTA (Associated Oregon Rail Transit Advocates) design for a MAX subway which I must object on the basis of its diagonal deep bore tunnel route through downtown beneath towers becoming vulnerable to settling and earthquake damage. My Naito Pkwy route, a 'stacked' cut/cover tunnel, separates the most prone to earthquake liquefaction waterfront soils from downtown buildings.

Page 14. A curb extension study for Old Town within Saturday Market environs with an "Ankeny Plaza."

Barbur Blvd MAX light rail concerns

1. Environmental Impact. Per official artist depictions, Barbur will be clear cut and a monstrous concrete abutment wall, about 30' tall, constructed. Between Burlingame and Corbett/Lair Hill, Barbur is widened from 4-lanes to 8-lanes, (2-lanes for MAX, 2-lanes for buses, 2-lanes in each direction for traffic. This segment of forest canopy will be clear cut. The segment further north will also be clear cut of forest canopy.

2. Impact on health. Trees and foliage collect diesel particulates and other pollutants. The abutment wall will allow these pollutants to reform into 'clouds of pollution' spread by wind and air flow of traffic.

3. Development potential. Barbur Blvd between Burlingame and Capitol Hwy at Taylors Ferry will likewise be widened, but traffic speeds will remain 35-45mph. Projected development will impose upon new residents this air pollution and noise right outside their windows. Walking to transit stops and to commercial enterprises alongside Barbur Blvd will not be a pleasant experience nor attract high quality development. Crossing Barbur will be as much or more hazardous than it is today. The new traffic entering/leaving Barbur to/from new development is an increase in accident potential.

4. Rail + Bus duplicative service flaws. For many transit trips, this choice of either bus or rail will encourage unsafe pedestrian crossings of Barbur and side streets to reach bus stop or rail station, whichever vehicle comes first. Transferring from MAX to bus lines is both time-consuming and creates hazardous crossings of Barbur. Only BRT can 'spur' off Barbur to other existing bus routes, in the process increasing the number of BRT routes. Because the plan includes bus lines, and because Barbur is already a relatively fast, scenic bus route, and because BRT will NOT require near as much widening of Barbur, BRT is seemingly more suitable than MAX. It seems Metro has not performed 'due diligence' in its considerations and questionable rejection of BRT.

5. LRT to Tigard/Tualatin via the WES corridor. Oregon's premier rail advocacy AORTA (Associated Oregon Rail & Transit Advocates) does not support MAX on Barbur Blvd. Instead, they propose converting the WES corridor into an extension of the MAX Red Line from Beaverton to Wilsonville. The Portland & Western RR would continue to operate a single-track with a double-track MAX line alongside. This would cut cost by more than half and impacts are minimal. Portland-bound traffic would still be served, but so would cities in Washington County. Motorists who drive Hwy 217 would have a fine transit alternative, much like Hwy 84 Banfield Freeway motorists have an LRT alternative.

6. Development potential on the WES corridor. It may be possible to include a Washington Square station with a MAX 'flyover' to/from the WES corridor. There could be a Beaverton City Hall MAX station and stations 'flanking' this flyover along the WES corridor.

7. Bridgeport Village Terminus. This destination is possible on the MAX line, but not as a terminus. That is, from there it should extend to Tualatin 'proper' on the converted WES corridor. It may also extend to Wilsonville, especially desirable with a connection to an improved Amtrak Cascades line. A stipulation that these extensions are an eventual necessity should be a part of any legal public agreement.

City Council Communication 8-21-19

My name is Art Lewellan. I have been an advocate for light rail, streetcar and better buses for Portland and our nation since 1992. I had an epiphany that year in which cars and trucks were impossibly overwhelming not just city streets and freeways, but the entire planet with air and water pollution, with insensibly unjust costs, and wars for oil. Mass transit then and still today seems the only solution. I question the intelligence or integrity of anyone who believes self-driving car nonsense is even possible, never mind inevitable.

Between 1995-98, transit advocates like me argued before City Council that the North/South MAX proposal then should go back to the drawing board. Voters wisely rejected it and Tri-Met's Yellow, Green and Orange Lines were acceptable replacements with less impact, less cost and have served more transit riders.

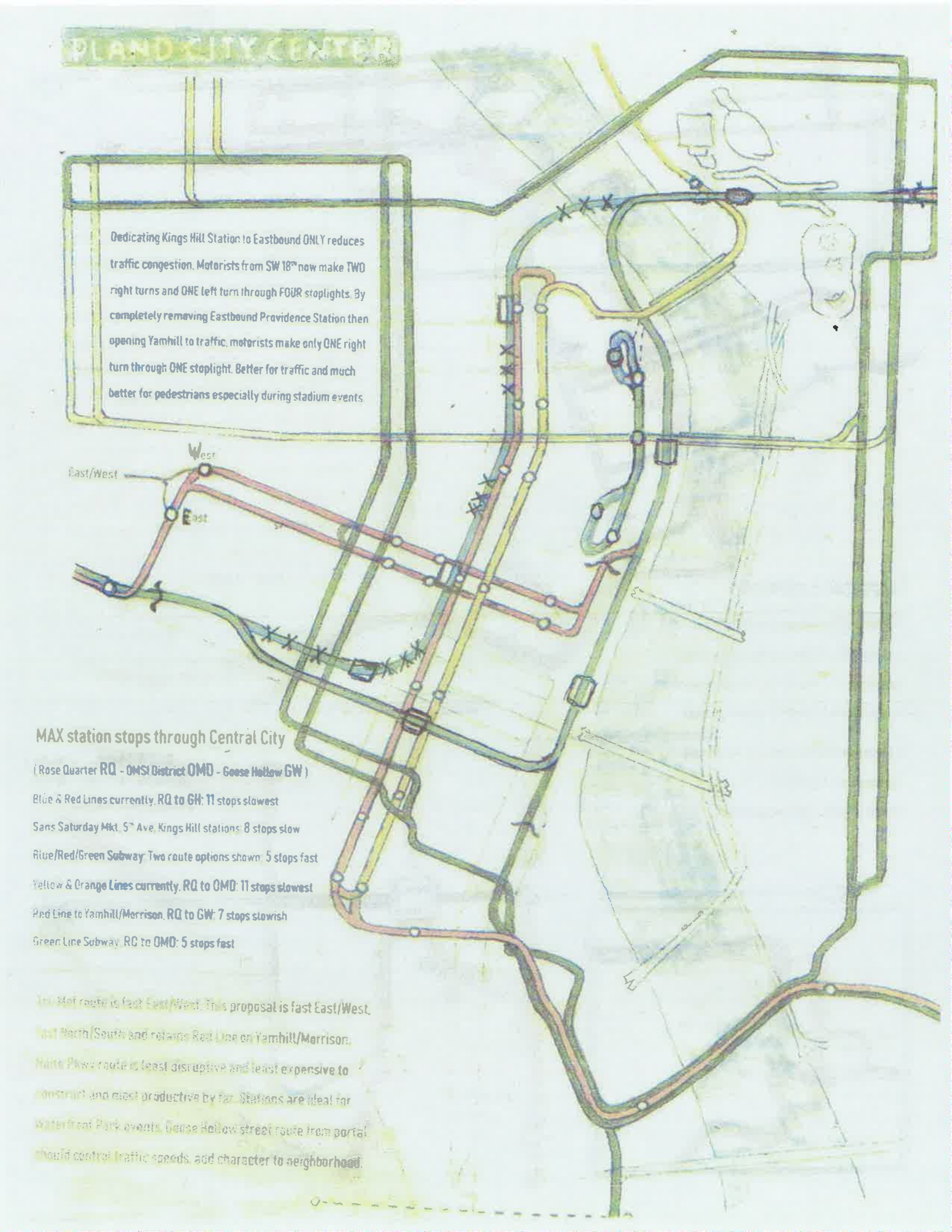
Today's SW Corridor MAX proposal on Barbur Blvd, just like the North/South MAX, should be rejected and go back to the drawing board. The alternate MAX route to Tigard and Tualatin is an extension of the Red Line from Beaverton via the WES corridor. The undeniably ideal alternative for Barbur Blvd is Bus Rapid Transit, especially on fast routes like Barbur where old style buses are suitable.

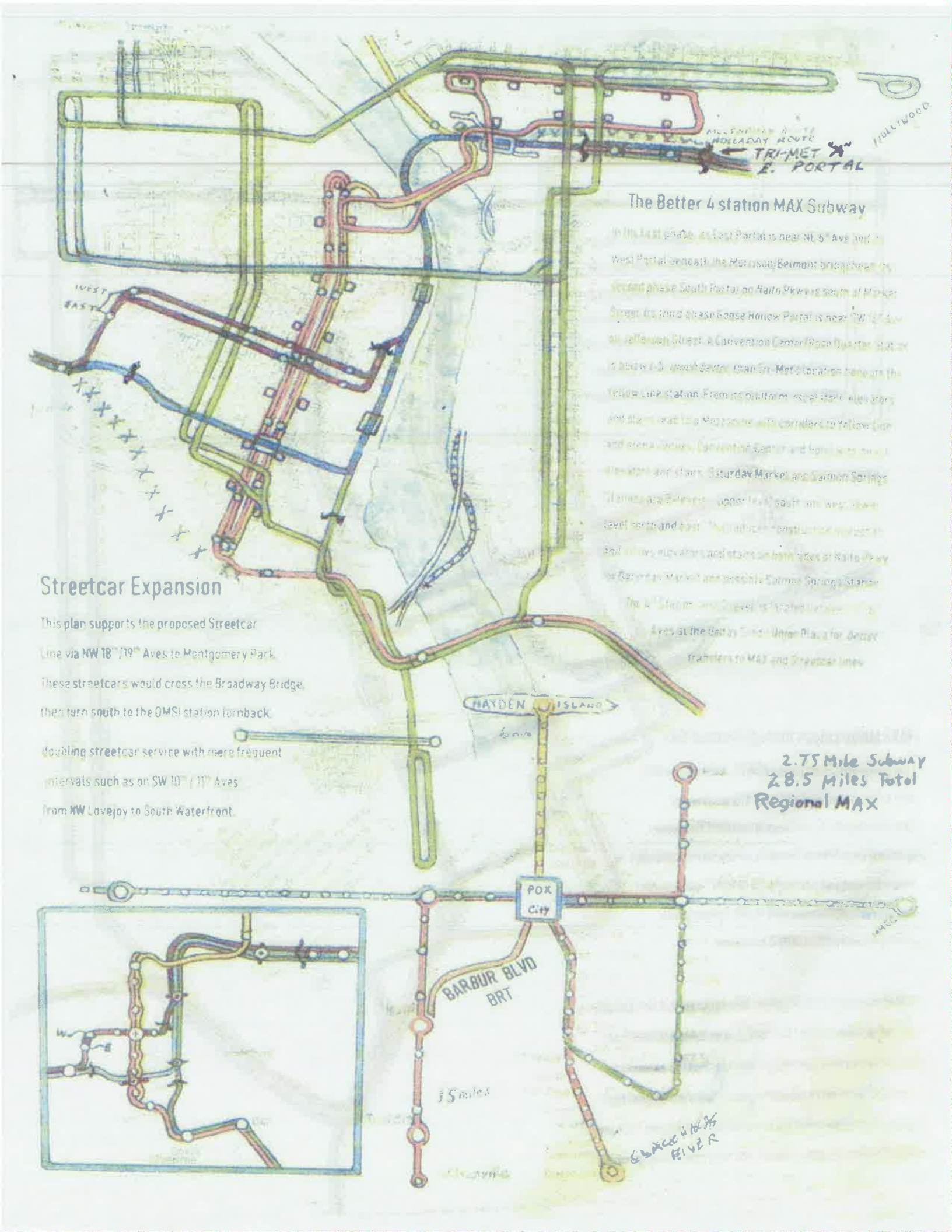
BRT or Rapid Bus WITH "CURB" STOPS.

I believe City Council and Metro do not want the public to know about these alternatives. They don't want to inform the public about dreadful impacts, about the taking of properties, about the clearcutting of Barbur treescape, about how widening Barbur Blvd makes crossing more hazardous for pedestrians and for motorists. They will say, "Oh, that's just his opinion, blah blah."

Here are drawings of these plans. Viewers with DVR who can record this hearing, make a copy, push pause and take photos to study and learn what City Council and Metro do not want you to know. They have refused requests for a formal review of my 14-page pamphlet and related documents regarding these concerns.

Therefore, I am forced to pursue legal means to bring the Barbur Blvd MAX project to a halt. If a class action lawsuit is necessary, so be it. I am however offering a face-saving means to call this terrible mistake a learning experience. If City Council will formally authorize independent studies of Bus Rapid Transit for Barbur and a MAX route via the WES corridor, their obligation to dutifully serve the public would be filled and a lawsuit hopefully avoided. Either way, I am calling for the immediate resignation of Tri-Met director Doug Kelsey.


PLAN C: CITY CENTER
Dedicating Kings Hill Station to Eastbound ONLY reduces traffic congestion. Motorists from SW 18th now make TWO right turns and ONE left turn through FOUR stoplights. By completely removing Eastbound Providence Station then opening Yamhill to traffic, motorists make only ONE right turn through ONE stoplight. Better for traffic and much better for pedestrians especially during stadium events.
West
East/West
East
MAX station stops through Central City
(Rose Quarter RQ - OMSI District OMD - Goose Hollow GW)
Blue & Red Lines currently. RQ to GH: 11 stops slowest
Sans Saturday Mkt. 5th Ave. Kings Hill stations: 8 stops slow
Blue/Red/Green Subway: Two route options shown: 5 stops fast
Yellow & Orange Lines currently. RQ to OMD: 11 stops slowest
Red Line to Yamhill/Morrison. RQ to GW: 7 stops slowish
Green Line Subway. RQ to OMD: 5 stops fast
Red Mall route is fast East/West. This proposal is fast East/West, fast North/South and retains Red Line on Yamhill/Morrison.
Kings Plaza route is least disruptive and least expensive to construct and most productive by far. Stations are ideal for Waterfront Park events. Goose Hollow street route from portal should control traffic speeds, add character to neighborhood.



The Better 4 station MAX Subway

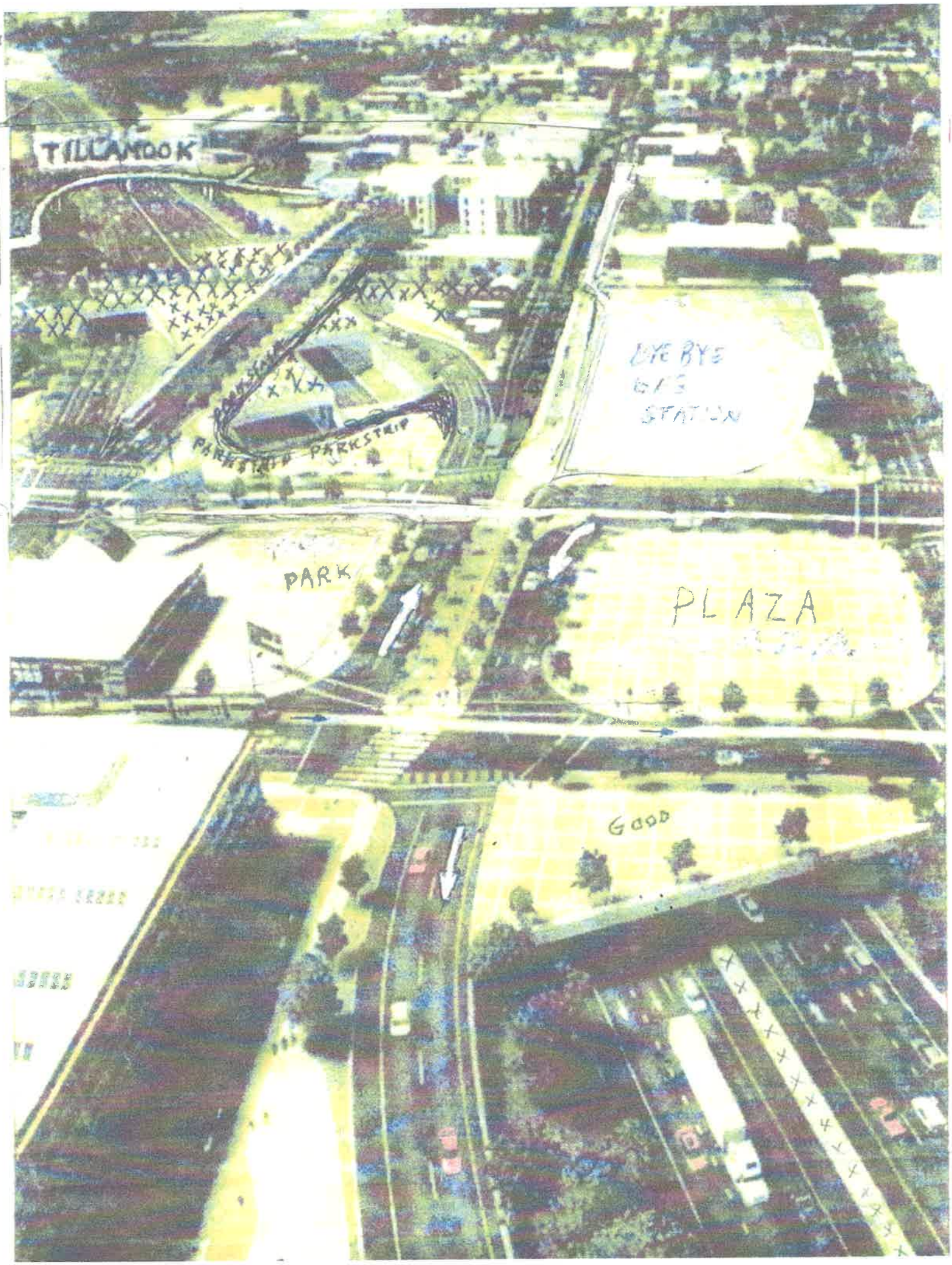
In this last phase, the East Portal is near NE 6th Ave and the West Portal beneath the Morrison/Belmont bridgehead. The second phase South Portal on Naito Pkwy is south of Market Street. For the third phase Goose Hollow Portal is near SW 18th Ave on Jefferson Street. A Convention Center/Nob Hill station is about 1/3 mile closer than Tri-Met's location between the Yellow Line stations. From its platform, escalators and stairs will lead to Mezzanine with corridors to Yellow Line and cross streets. Convention Center and Nob Hill stations will have elevators and stairs. Saturday Market and Salmon Springs stations will have elevators and stairs on south and west sides, level north and east. The additional construction would be elevators and stairs on both sides of Naito Pkwy at Saturday Market and Salmon Springs Stations.

The A Station and Tunnel is located under Ankeny between 3rd Ave at the Galleria and Union Plaza for direct transfers to MAX and Streetcar lines.

Streetcar Expansion

This plan supports the proposed Streetcar Line via NW 18th/19th Aves to Montgomery Park. These streetcars would cross the Broadway Bridge, then turn south to the OMSI station turnback, doubling streetcar service with more frequent intervals such as on SW 10th / 11th Aves from NW Lovejoy to South Waterfront.

2.75 Mile Subway
28.5 Miles Total
Regional MAX


TILLAMOOK
PARKSTRIP
PARKSTRIP
BYE BYE
GAS
STATION
PARK
PLAZA
GOOD

Vancouver-
Hancock
Cover

Broadway-Weidler
Williams Cover

Vancouver-
Hancock
Cover

Broadway-Weidler
Williams Cover

Crossing

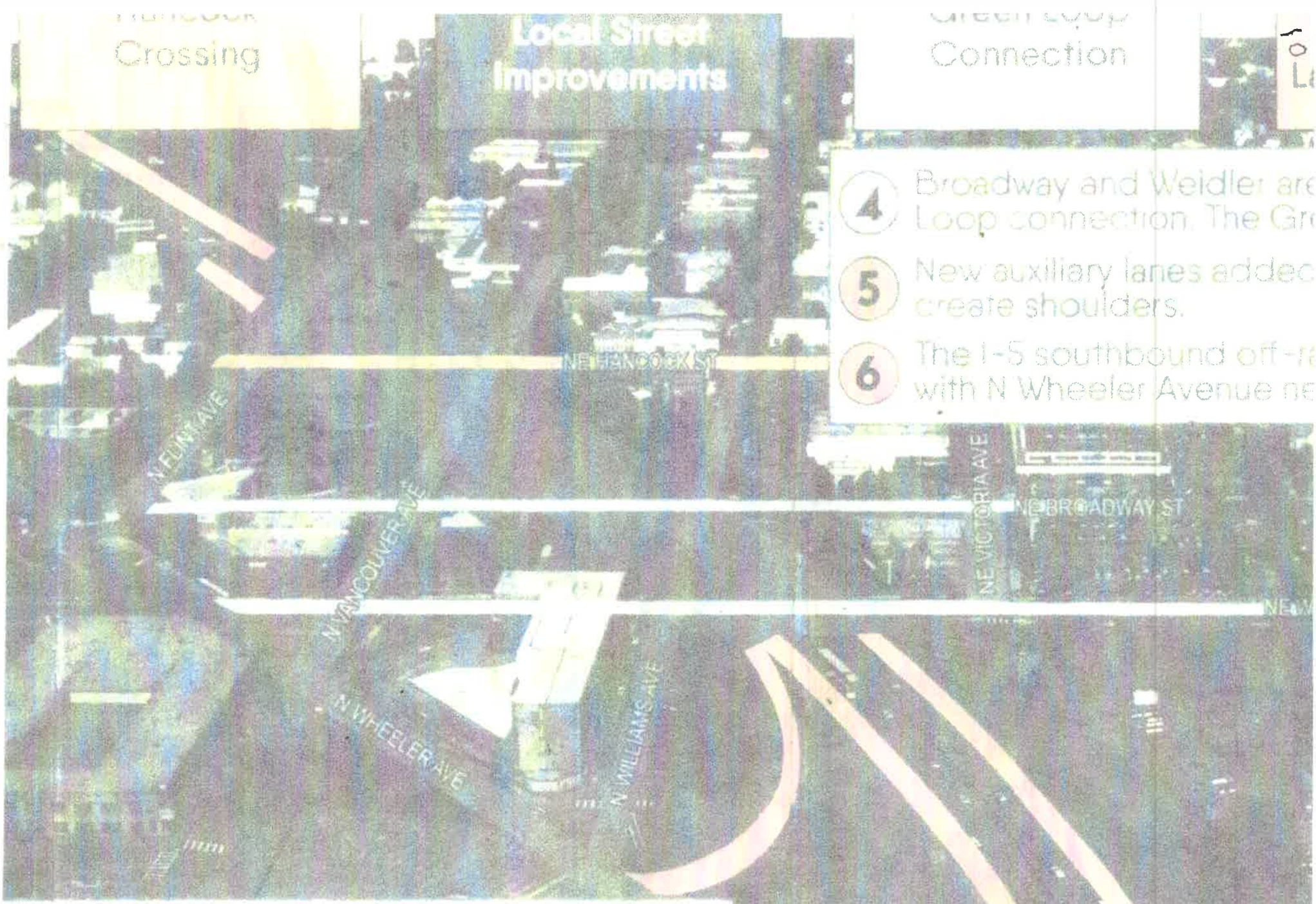
Local Street Improvements

Connection

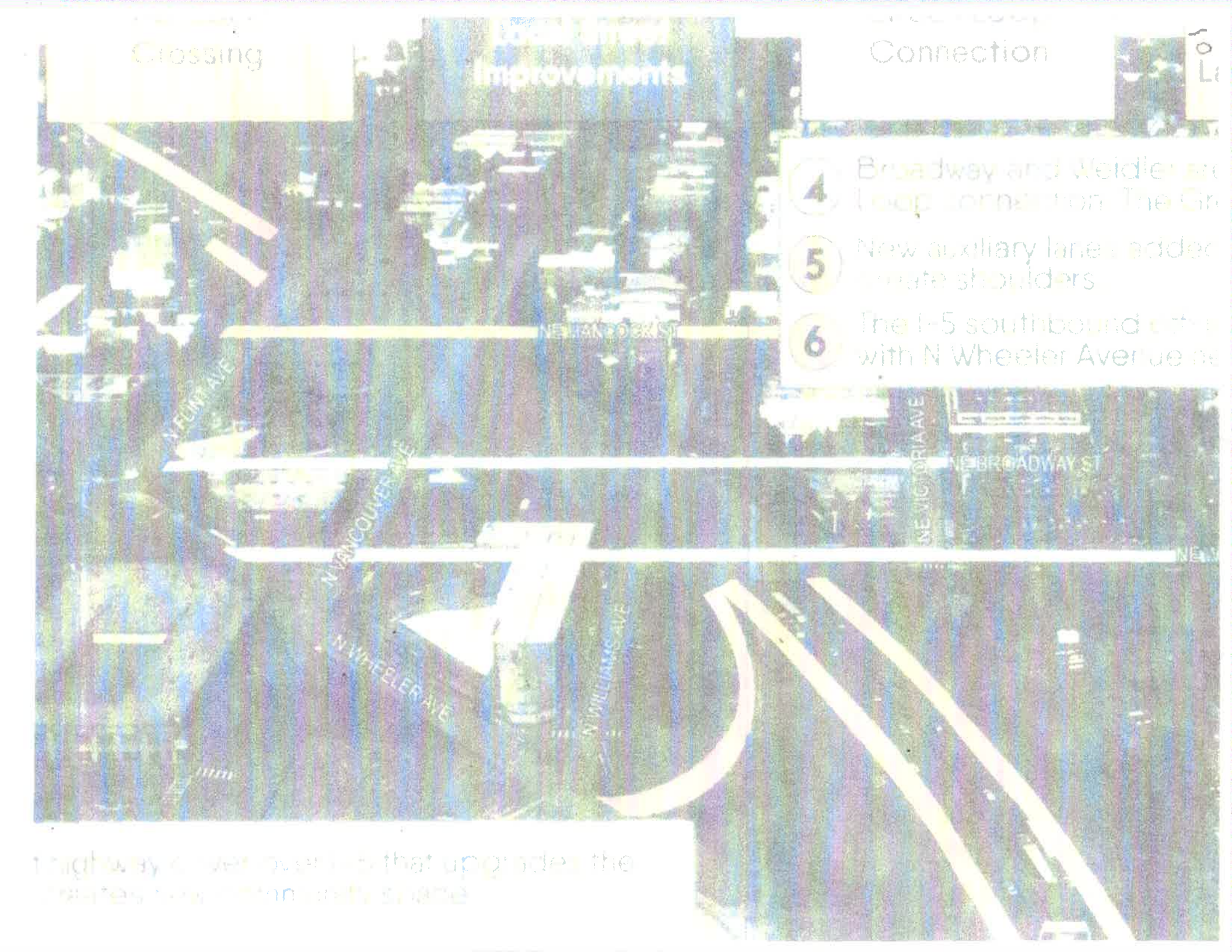
4 Broadway and Weidler are
Loop connection. The Gre

5 New auxiliary lanes added
create shoulders.

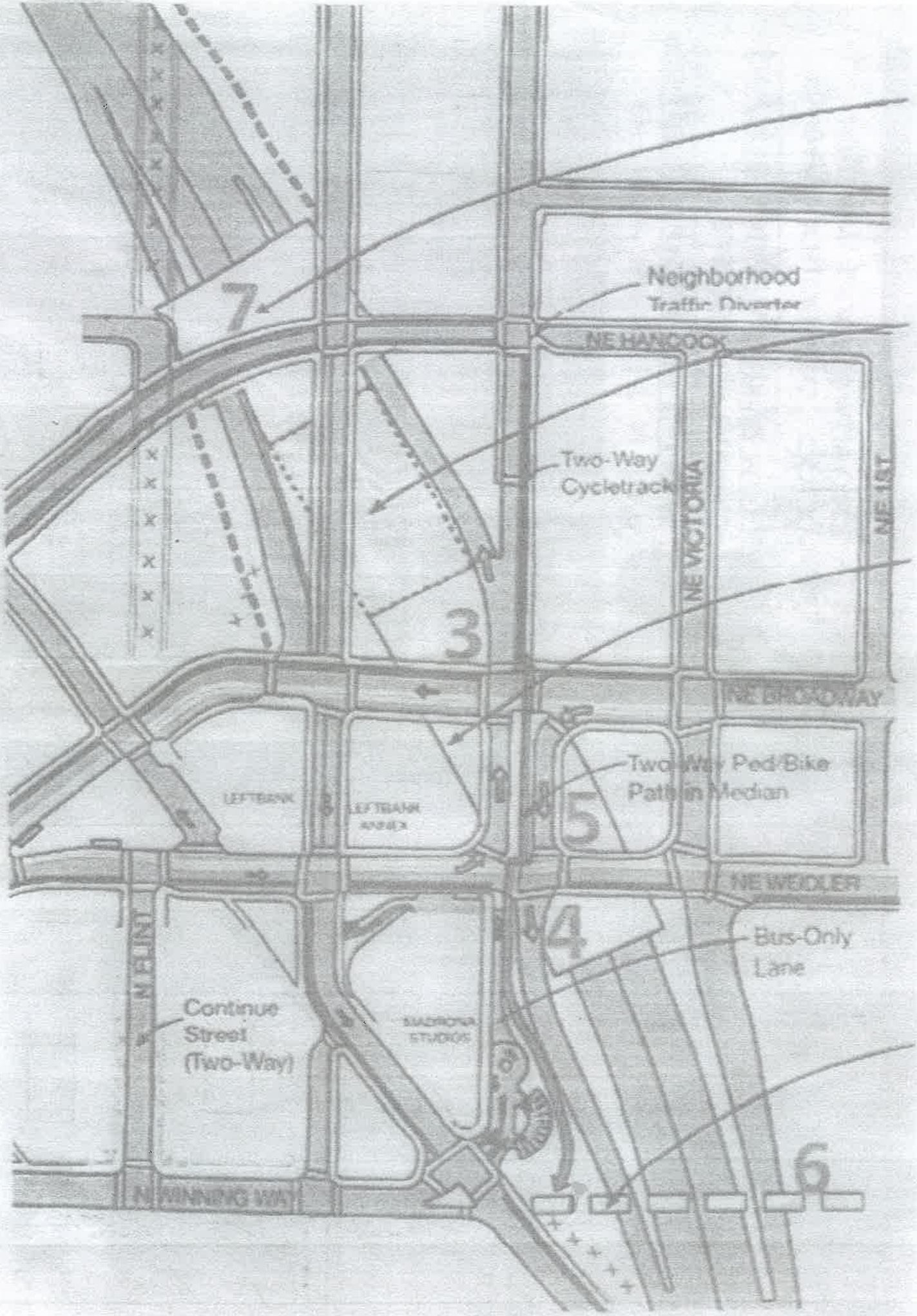
6 The I-5 southbound off-ra
with N Wheeler Avenue ne

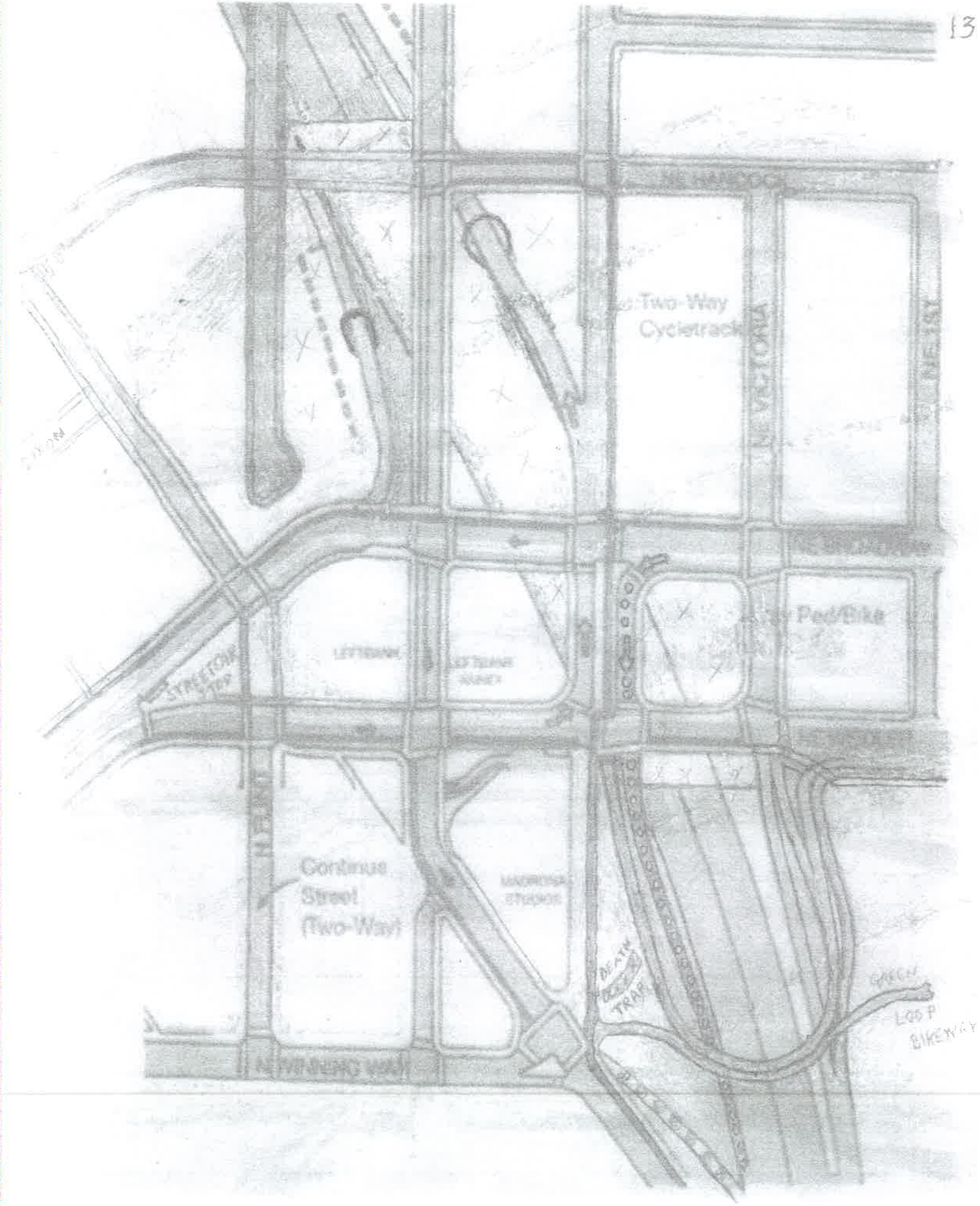


t highway cover over I-5 that upgrades the
creates new community space.


Crossing
Improvements
Connection
4
5
6
NE 4TH CT ST
NE BROADWAY ST
NE VICTORIA AVE
N VANCOUVER AVE
N WHEELER AVE
N WILLIAMS AVE


4
Broadway and Weidler
auxiliary lanes
The I-5 southbound off-ramp
with N Weidler Avenue


Neighborhood
Traffic Diverter
NE HANCOCK
Two-Way
Cycletrack
NE VICTORIA
NE 1ST
NE BROADWAY
Two-Way Ped/Bike
Path in Median
NE WEIDLER
Bus-Only
Lane
N LINN
Continue
Street
(Two-Way)
N WINNING WAY
7
3
5
4
6


NE HANCOCK
Two-Way
Cycletrack
N VICTORIA
NE INTERSTATE
Ped/Bike
Continue
Street
(Two-Way)
DEATH
TRAP
GREEN
LOOP
BIKEWAY