Council Meeting Date: June 7, 1999 **Agenda Item: 6(a)**

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Status Report on the Planning Academy and Development Code Revisions
DEPARTMENT:	Planning and Development Services
PRESENTED BY:	Tim Stewart, Director Anna Kolousek, Assistant Director

EXECUTIVE / COUNCIL SUMMARY

On January 19, 1999 your Council approved the process and timetable for adoption of the permanent development regulations that implement the Comprehensive Plan and subsequently (February 23) appointed 37 citizens to the Planning Academy.

In order to make the process more manageable, the Council agreed to split the code writing and adoption into two phases. During the first phase two groups of code provisions are being addressed: a) procedural issues of the code, and b) uncontroversial development standards. The second phase will focus on the "substance" changes to the development regulations. (Please see Attachment A for the outline of the Planning Academy - Phase 1 and Phase 2 Sessions).

The purpose of this agenda item is to brief your Council on the extensive work undertaken by the Planning Academy and Planning and Development Services staff during the first phase. We expect that the Planning Commission will review the draft of the first part of the permanent code (procedures, definitions, and uncontroversial standards) in July and your Council will be asked to adopt it in August.

In addition to this report, there are several attachments to assist your Council in its review of the Planning Academy work. These attachments include:

- Examples of the background material distributed to the Academy to explain the regulatory requirements, general code organization, and permit processes (Attachment B).
- Examples of assignments the Academy members worked on during the first four sessions (Attachment C).

Over the past two months the Academy has met four times. For the first two Academy sessions, held on April 8 and April 22, we had two volunteer speakers: Heather Ballash, attorney with Washington State Department of Community, Trade & Economic Development, explained the status of the regulatory requirements specified in four state laws (Growth Management Act - GMA, State Environmental Policy Act – SEPA, Shoreline Management Act – SMA, and Engrossed Substitute House Bill (ESHB) 1724;

Jay Derr, attorney and partner of Buck & Gordon, explained his experience with development codes, what works and what does not work.

At the beginning of the phase 1 the Academy members took photographs of positive and negative features of various developments. These features could be "translated" into development standards reflecting the "community vision". Please see the Attachment B for examples of positive and negative pictures of single-family houses (with comments) taken by the Academy members.

Prior to the second session of the Academy (April 22), the Academy members were asked to obtain permit type information from various other jurisdictions. They contacted various jurisdictions (in person and on the web site) and noted various approaches to short plat, variance, accessory dwelling unit and other application types. The obvious winner from contacted jurisdictions was Edmonds, for clear methods of providing information to applicants. Other jurisdictions contacted by the Academy members were Lynwood, Lake Forest Park, Woodway, King County, and Seattle.

The third and fourth Academy sessions were substantially different from the two earlier sessions. Rather than relying on outside "experts" to present the issues for consideration, these two sessions drew upon the experience and values of the Planning Academy members.

During the third session (May 13) the Academy members discussed, with the staff's assistance, the procedures for administrative, quasi-judicial and legislative decision making. The Academy reached a clear consensus on five major recommendations for code process improvements:

- Establish neighborhood notification process;
- Road variances to go through the same process as zoning variances;
- Hearing Examiner to be a hearing authority on quasi-judicial matters, rather than the Planning Commission;
- Develop clear design standards;
- Establish mandatory pre-application meetings with neighbors.

The fourth session (May 27) provided the Academy with an opportunity to review and identify their "values" for single-family houses based on their photographs taken as part of the assignments for the first session. The Academy members identified the highest priorities for the development features relative to single-family houses and neighborhoods. At the end, uncontroversial features, already addressed in existing code were identified. These features will be included into the re-formatted code during the first phase.

Using the information gained from the first four sessions of the Academy, staff will draft the revisions to existing procedures and re-format the uncontroversial standards into a draft of the permanent development code. The Planning Commission will hold a Public Hearing on the first phase of the proposed code in July. Your Council will review their recommendations in August and take action in September.

Concurrently with the adoption process of the first phase, the Academy and staff will work on the preparation of the "substance" changes to the code – phase 2. (Please see

the Attachment A.) Your Council will be briefed in September about the progress of the Academy. The staff will forward the draft development code to the State (Department of Trade and Economic Development) for review. After we receive comments from the State, the Planning Commission will hold a Public Hearing on the second phase of the proposed code in October. The City Council will review the Commissions recommendations and take action in December 1999 or in January of 2000.

Adoption of new development involves a period of "testing" of effects that may result from some new regulations. Development codes should be reviewed annually and ongoing amendments to regulations will be necessary to reflect the changing community values, judicial decisions, regional, state and federal laws and regulations.

(Please note that there is a binder in your Council's reading room, which includes all material distributed to the Academy during the first phase.)

RECOMMENDATION

This item is presented for your Council information, no action is necessary.

Approved By: City Manager LB City Attorney N/A

ATTACHMENTS

A. Planning Academy Study Sessions (reviewed by your Council on 1/19/99).
B. Examples of the background material distributed to the Academy to explain the regulatory requirements, general code organization, and permit processes.
C. Examples of assignments the Academy members worked on during the first four sessions.

ATTACHMENT A

CONCEPTUAL PLANNING ACADEMY STUDY SESSIONS FOR THE FIRST PHASE

First Session:	Topic:	Discussion Elements:
#1 April 8	Review of the Growth Management Act (GMA) and Other Regulatory Requirements.	• GMA requirements. • Timing for development code adoption. • What is: ESHB 1724, State Environmental Policy Act (SEPA), Shoreline Management Act (SMA). • Review of existing regulations.
#2 April 22	Development Code: Outline of the Code Structure.	• Consolidated format of all regulations in one document - examples. • Types of regulations. Numerical standards (such as setbacks, height restrictions, building coverage, impervious surface ratios, lot sizes), performance standards (visual examples, demonstration projects, site design and density averaging), design standards, street standards, landscaping standards, signs, building standards. • General code organization and appearance.
#3 May 13	a) Review of the Development Code Administration. b) Definitions and Development Standards.	• Authorities for decision. • Application requirements. • Types of permits. • Types of hearings (closed and open record). • Vesting. • Filing of appeals. • Time limits. • Noticing. • Code definitions used throughout the various existing regulations. • Avoiding regulations in definitions. • Cross referencing.
#4 May 27	Community Values: Uncontroversial Standards	• Revisions to existing standards. • Outline for second session.

CONCEPTUAL PLANNING ACADEMY STUDY SESSIONS FOR THE SECOND PHASE

Sessions:	Topics:	Examples of Discussion Elements:
#5 June 17	Land Use Districts	General purpose and type of land-use districts: Residential (Single - and Multi – Family), Commercial/Office, and Industrial.
#6 July 8	Development Standards Applicable to all Land Use Districts	Dimensional requirements. Specific Use Requirements. Amenities requirements. Design standards.
#7 July 29	Special Overlay Districts	Setting for special districts. Design standards for Special Districts. Design review. North City Business District. Aurora Business District.
#8 August 12	Public Works Requirements	Examples of various types of public works Standards: Street Standards, Sidewalks, Parking, Erosion control, and Grading. How these standards relate to Land Use.
#9 Sept. 9	Public Works Requirements (cont.) and Building Code Requirements	Storm Drainage and Uniform Building Codes.

PLANNING ACADEMY SESSION #1

Assignment

"Tell me, I forget;
Show me, I remember;
Involve me, I understand"
Eastern Proverb

Positive or negative images and public perceptions of specific developments can be translated into specific development code provisions that reflect our "community vision" for accommodating future growth. The first assignment is aimed at revealing some positive and negative features of various types of developments that individual members of the Academy have observed.

In this assignment, the Planning Academy members are asked:

1. **To take photographs of various developments with the enclosed "one-time use camera".**
   a) Positive Features - three photos of each:
   - **single-family,**
   - **commercial,**
   - **and multi-family**

   development you have seen in the City of Shoreline (or other areas) with features you would like to encourage in development or re-development in the City of Shoreline.

   b) Negative Features - three additional photos of each:
   - **single-family,**
   - **commercial,**
   - **and multi-family**

   developments you have seen in the City of Shoreline (or other areas) with features you would like to discourage in development or re-development in the City of Shoreline.

2. **To briefly describe, under each photo, development features they would like to encourage or discourage. Positive evaluations will indicate the potentials for types and styles of development that would be acceptable to the community. If we can identify and prepare development standards the characteristics most people want, the resulting developments would be more likely to contain characteristics that are consistent with our community vision, and vice versa.**

PLANNING ACADEMY SESSION #2

Assignment

This is your second assignment, which closely relates to procedures for permit types you will review during the third Academy session.

1. We are asking you to pretend that you own a property in the following jurisdiction (you may choose one or more jurisdictions):

- **King County**
- **Edmonds**
- **Lynnwood**
- **Everett**
- **Seattle**
- **Mountlake Terrace**
- **Lake Forest Park.**

2. Contact the jurisdiction(s) of your choice and tell them that you wish to use your property for one (or more) of the following land development activities:

- **Short Plat**
- **Variance from any required building setback**
- **Zone change for your property to a higher residential density**
- **Sign permit for your business**
- **Vacation of a street which is presently adjacent to your property but not serving as public street**
- **Home occupation – you wish to have a business in your house and you will have three part-time employees and twice/week deliveries of boxes you wish to store in your backyard**
- **Accessory Dwelling Unit**
- **Children Day Care Facility.**

3. On April 22, bring to the Academy a one-page summary of your experience in obtaining the request of your choice:

- **Attach application forms and checklists you have obtained from the jurisdiction.**
- **Attach the time-line for processing of your potential application you obtained from the jurisdiction.**

SHORELINE PLANNING ACADEMY

Session #3 Worksheet / Session #4 Assignment

Based on the fact that the City of Shoreline has a moratorium that precludes the creation of new single family lots (through subdivision or short plat) less than 7,200 square feet in size:

1. Do you recommend that the existing Shoreline Municipal be amended to permanently require a minimum lot size of 7,200 square feet in the R-4 and R-6 zones?

Note: Recent decisions by the Growth Management Hearings Board indicate that development in urban areas should be at least 4 units per acre (to put this in perspective, 7,200 square feet is 6 units/acre, while 4 units per acre is about 10,800 square feet per lot). Shoreline is currently using standards for minimum density adopted from King County during the incorporation. These standards specify that the minimum density shall not be less than 85% of the base density. For example, in the R-6 zone, the base density is 6 units/acre, therefore, the minimum density required is no less than 5.1 units/acre.

2. Should the City adjust its minimum density to roughly 4 units/acre to meet the minimum standards of the Growth Management Hearings Board?

Note: Minimum lot sizes of 7,200 square feet would keep the base density in the R-6 zone at 6 units per acre.

3. Should a higher density (above 6 units per acre) be allowed in single family R-6 zone areas through a process (e.g. TYPE C) that would require approval by the City Council?

4. If so, should there by a ceiling on density (i.e. maximum density no higher than 8 units/acre or 5,000 square foot lots) in the R-6 zone?

5. Should there be special criteria (i.e. design, vegitation retention, etc.), that must be accomplished in order to achieve maximum density?

Name _____ Date_____

Single Family - Positive

Sheridan Beach, off Bothell way. Modest homes with substantial amount of permeable surface. Planter strips are wide enough to accommodate substantial trees. Unfortunately, such trees would soon interfere with overhead wires.

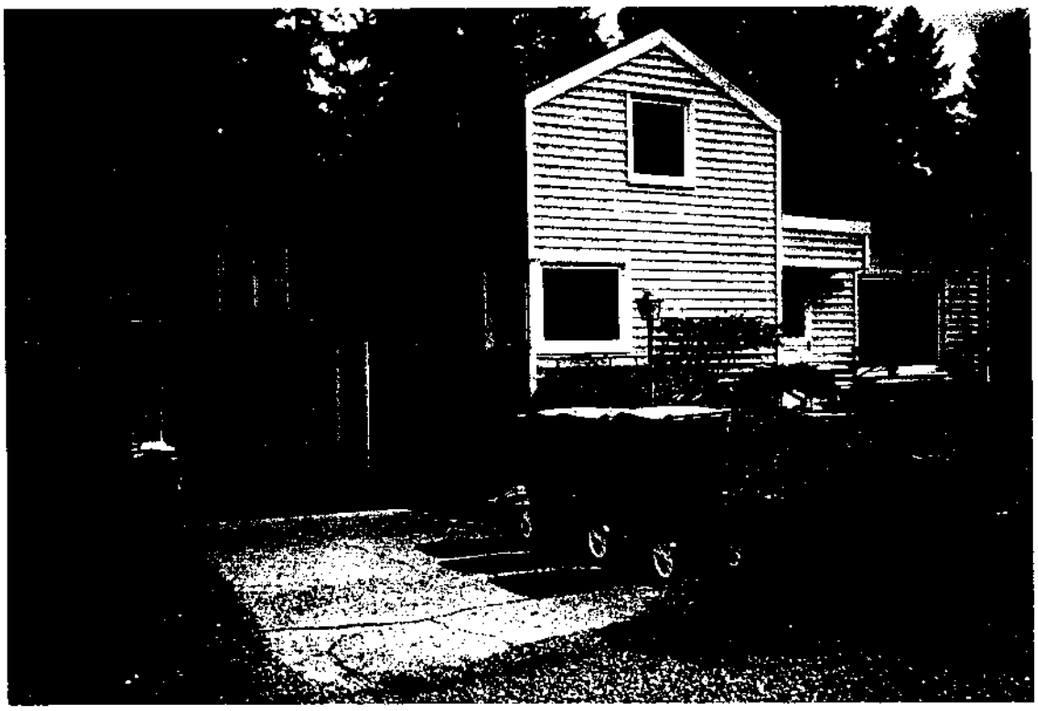
Al Wagar

Ms. Ginger Botham
Ric Botham
16334 Linden Avenue N.
Seattle, WA 98133-5620

2. Single Family = POSITIVE
Yellow House - 735 North 165th Street (Cooper & Tom Cat Construction)
1) Kept flowering tree in back yard at SW corner of lot
2) New fruit/flowering trees along west fence line
3) Kept big rhododendron
4) Same setback as rest of houses on street
5) Same height as rest of houses on street

13) Single Family = NEGATIVE & POSITIVE
525 – 175th = Habitat for Humanity THREE houses

1) Dangerous (10 ft?) narrow private road for THREE houses, up steep hill, blind corner for ingress/exit….too easy to force a car to either back up steep hill, or to back onto 175th if 2-way traffic on driveway to THREE houses.
2) No sidewalk … pedestrian has no safe place to escape traffic jam on blind driveway
3) Two stories tall – works fine due to lot topography
4) Some yard/some privacy…mostly due to topography
5) Has MORE YARD than 155th & Meridian project



21) Single Family = POSITIVE
15556 Stone Ave North

1) Affordable housing
2) BIG (enormous) back yard
3) Significant trees retained
4) Close walk to
   - schools
   - bus lines
   - stores
   - churches
   - quiet street
     (kitty naps in street)
   - NO SURFACE WATER PROBLEMS
     because built pre-1995 impermeable
     surface standards change
   - Adequate on-street parking for density

Good single-family development

Panel A: Serpertine N.E. and N.E. 177th, Shoreline

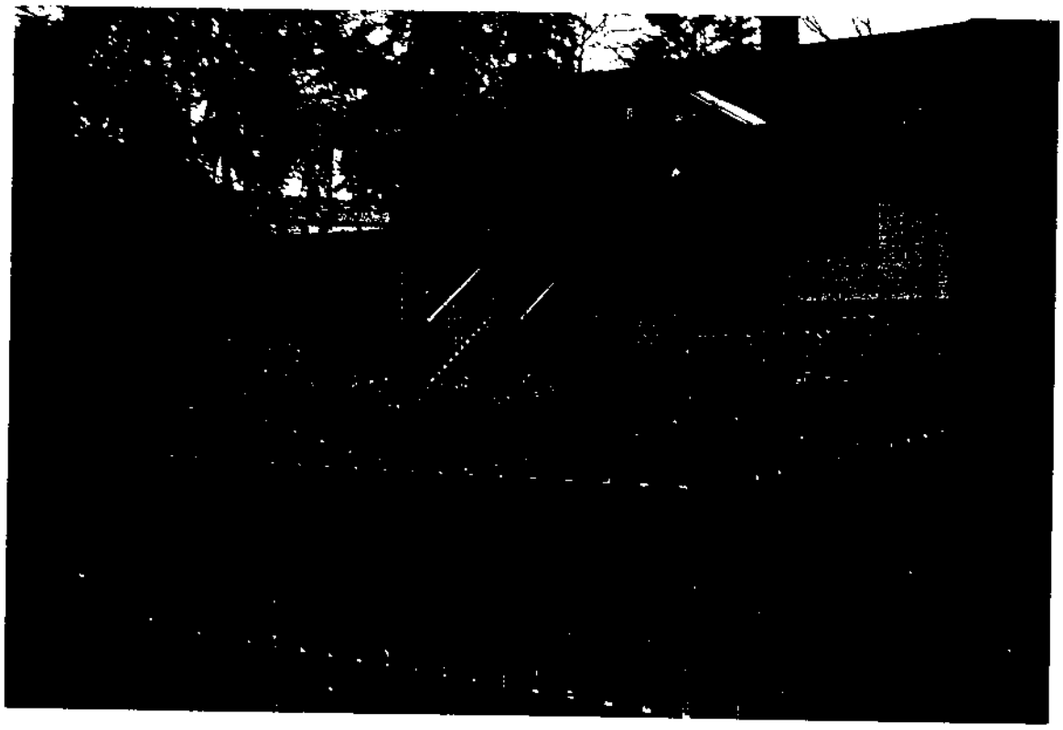
Panel B: 21st Place N.E., Shoreline

A

B

These pictures illustrate the many advantages of the older single-family homes that make up most of Shoreline. An important advantage of these older homes is that they consitute the most affordable (and generally the most attractive) single-family housing in Shoreline, and they should be preserved at all cost for this reason alone. The charm of the house in panel A contrasts markedly with the stark, uniformly battleship-gray monsters typical of new single family houses. Panel B illustrates an old subdivision of 6 houses which has a legal, adequate, access road and cul-de-sac turnaround. There is plenty of room for access and exit even by multiple delivery or emergency vehicles without the need to back up and thereby endanger pedestrians. Charactersitic of all the houses is adequate setbacks from the street and each other and, therefore, yards for play and privacy without the need to construct the "stockade" fences needed to attain privacy in new development. Privacy, and a pleasing frontage, is provided by vegetation instead of stockade fencing. Granted, it takes years for the vegetation to mature to the extent shown here, but it can never be planted, let alone mature, if no space (setbacks) are provided and if asphalt rather than dirt covers the lot. The time taken for this beautiful vegetation to matures makes it all the more disgusting when it is clear-cut and replaced with asphalt and ugly development as has occurred recently in Shoreline

SINGLE FAMILY HOMES (Positive)
A RESTORED 1922 BUNGALOW



The owners decided to preserve the original character of the home and street. From the street one sees a landscaped yard and the modest bungalow with newer large homes built behind it. This layering pattern of development, over a 75 year period, with a variety of home styles represented is pleasing to the eye.

SINGLE FAMILY RESIDENTIAL

SHORELINE

LIKES

* LOCATION
  Pervious Shoulder in Front of Property
  One Right of Way Along Front Only
  Narrow Street to Slow Traffic Naturally & Save Maintenance Money (Taxes)
  Street Speed 25mph

* LOT
  No Commercial, Mixed Use, Multi-family, Townhouses, Condominiums, or Duplexes in Area
  No Less than 7200 sq.ft. Lot
  No Less than 60 ft. frontage
  Front Setback no less Than 20 ft.
  Each Side Setback No Less Than 7 ft.
  Back Setback No Less Than 15 ft.

* HOME
  Exterior Earth Tones
  Two Story Designed to Grow with Occupant's Age
  Surrounded by Single Family Detached Homes

* LANDSCAPING
  Create Privacy
Missing → Preferably Native Trees for Northwest Image and Natural Air Conditioning
  Low Maintenance Flowering Plants with Changing Colors by the Seasons

POSTIVE FEATURES – SINGLE FAMILY

"Skinny" homes near North Seattle College

- SMALL HOMES MATCH THE SMALL LOT SIZES
- APPEALING DESIGN FEATURES (EXTERIOR PAINTING, HOUSE STRUCTURE, PICKET FENCES)
- PARKING IN REAR (NO "GARAGE SCAPE")

POSITIVE FEATURES EXAMPLE OF SINGLE-FAMILY PROPERTY

Spacious lot
House fits the size of the lot (didn't cram in 2 for the space of 1)
Attractive

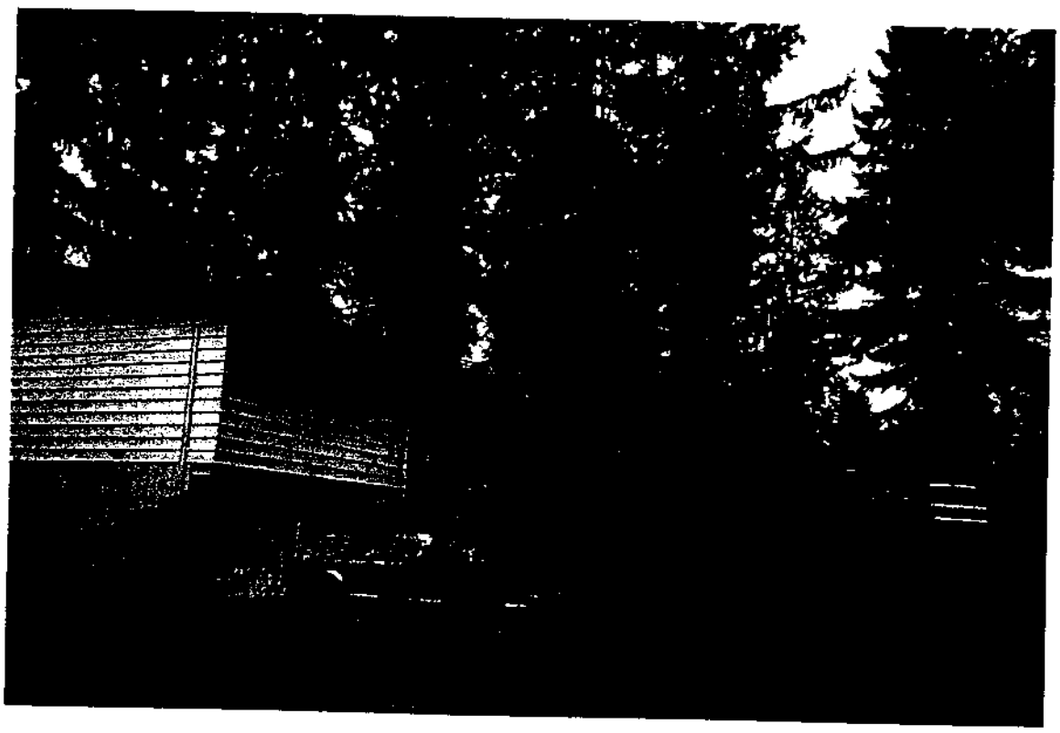
SINGLE-FAMILY POSITIVES

- HOME PLACED AMONG OLD GROWTH TREES
- SIZE IN CONTEXT WITH ADJACENT HOMES

N FREMONT @ N/182ND

POSITIVE FEATURES - RESIDENTIAL

Residential development retained 2nd growth forest. Gives appearance houses are within a forest.



2nd growth forest buffer separates properties.

NEIGHBORHOOD POSITIVE

2ND FLOOR BEACH HOUSE ADDITIONS ARE SET AWAY FROM STREET KEEP NEIGHBORHOOD CHARACTER & ARE PEDESTRIAN FRIENDLY

POSITIVE FEATURES EXAMPLE OF SINGLE-FAMILY PROPERTY

This is a good example of providing spacious housing on back lots.
Notice there are 2 houses -- not 3 or 4!

Single family dwellings:

Cottage housing: Each unit is separate. The units fill a corner of a block, facing either east or south with the rear of each building facing a common area. Good landscaping, Buildings are very similar but vary in building color, each have different, brightly colored doors, and varied and appropriate landscaping is around each unit. A parking drive is shared by the units. An occasional entry between units is welcoming (a trellised gates with overhead flowering vines). Each separately and as a unit have "road appeal" and encourages community gathering.

Residential

Good - Nice large turnaround.
Sidewalks, trees left standing.

Good:
Homes have consistency with others in area.

PARKWOOD GEE NEIGHBORHOOD

(Positive)

This house used to be a single story. The residents needed more space so they built up the house and kept there backyard big.

Single Family Development

25

1. **Development has a sense of scale within itself and contributes to surrounding properties.**
2. **Access and parking is well designed**
3. **Landscaping (individual and common) contributes aesthetically to entire development.**

Frank W. Meyer
4/21.99

Single Family
Older style but still nice

1. Building has a sense of scale with surrounding properties.
2. Landscaping designed to fit structure
3. Open space has been preserved.
4. Design maximizes use of structure footprint in realizing most useable interior square footage.
5. Finish is consistent with neighborhood.
6. Roofline is peaked but not overly so.
7. Access and parking is well designed.
8. Structure is attractive and has nicely flowing lines

Frank W. Meyer
4/21/99

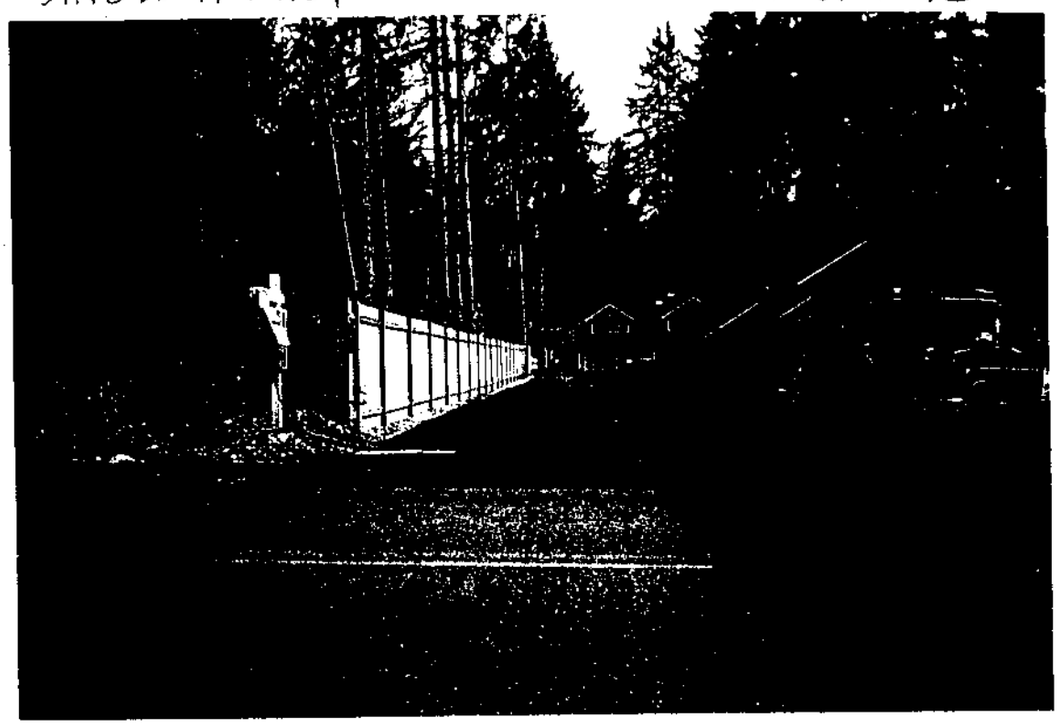
Pasture Single Family

165th / Linden

- Old house was torn down and another (1) placed on same lot.
- Design fits neighborhood
-

KL

SINGLE FAMILY NEGATIVE



- STOCADE / FORTRESS : 6'-0" HIGH FENCES ARE UNFRIENDLY & DANGEROUS
- NEEDS LANDSCAPING
- CARS WILL PARK ALONG DRIVE, OTHER CARS WILL BACKOUT & KILL KIDS
- LOOKS LIKE AN ALLEY NOT ENTRY

SINGLEFAMILY NEGATIVE

NEW CONSTRUCTION DOES NOT FIT-IN WITH NEIGHBORHOOD CHARACTER.

ALL THE HOUSES ARE LOW AND IT STICKS OUT.

Single family dwellings:

Problems: narrow drive between two existing buildings to access rear lots. Buildings look better in the picture than in reality. There are a total of 6 or 7 and each are very narrow, close together, and set on a hill so they are either 2 or 3+ stories depending on the angle of view. Concrete "front yards".

Single Family
AWARD WINNER
For
INTRUSIVENESS AND UUGGLINESS

1. Buildings overpower surroundings and have no sense of scale with surrounding properties.
2. Combination appears to warrant R-12 in an R-6 surrounding
3. Buildings have removed view for at least two properties and have few privacy considerations.
4. Flat roof and structure under it is a monument to the dynamic inaction and lack of code that allowed such monstrosities to be built
5. Access and parking is sufficient only if there are no visitors.
6. Structures are ugly and have no redeeming architectural merit.
7. Landscaping is sterile.

Frank W. Meyer

Single Family - Negative

Trailer court, 1 block west of Aurora at 144th - Trailer courts can be attractive. This one is a mess! It would be interesting to know if trailers are owner-occupied or rented. If latter, City may have added leverage in improving the situation.

Al Wagar

NEGATIVE FEATURES – SINGLE FAMILY

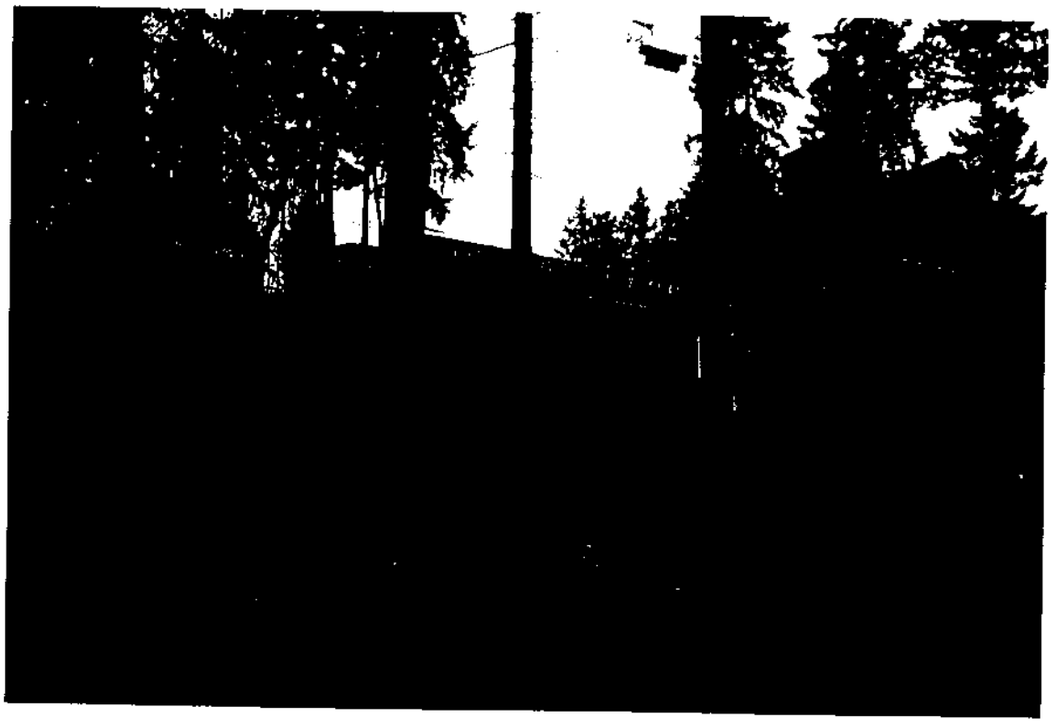
- TYPICAL SHORELINE 'INFILL"
- DISIMILAR ORIENTATION, LEAVING FRONT YARDS ABUTTING BACKYARDS
- AN APPEARANCE OF HOUSES JAMMED AGAINST EACH OTHER, LEAVING NO ROOM FOR YARDS
- LARGE HOMES ON SMALL LOTS
- LITTLE ROOM FOR ANYTHING ELSE AFTER HOUSE, GARAGE, AND DRIVEWAY IS BUILT

Residential

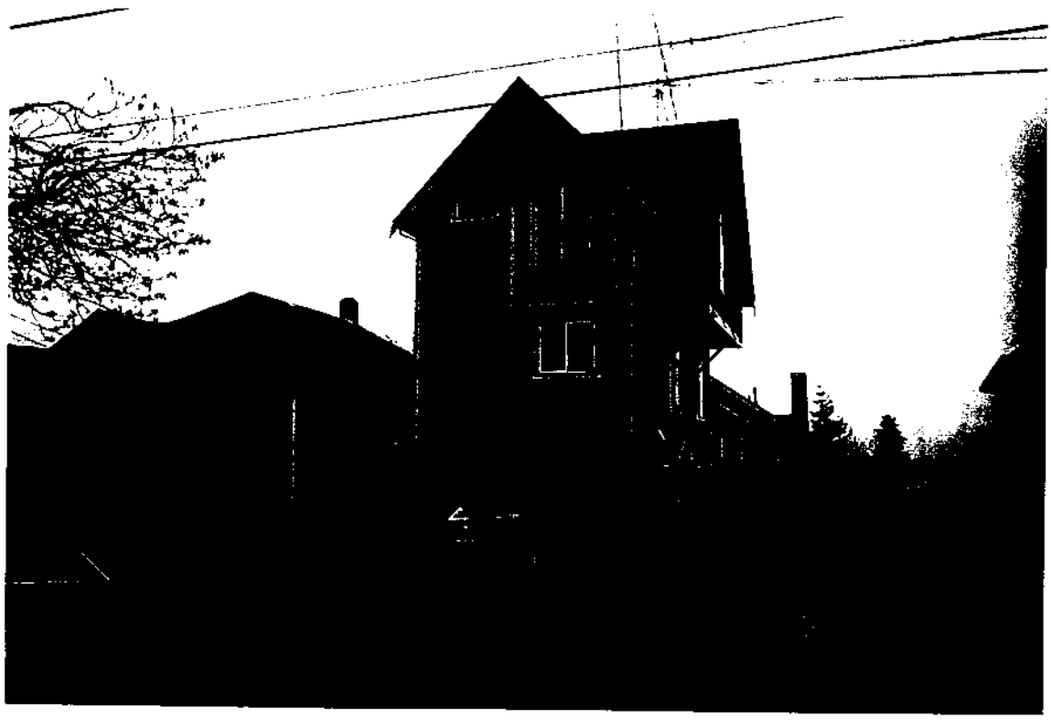
Poor - Tacky little fences - almos no yard. There is no turnaround for cars. You have to back up in driveway

Page 146 from City Comforts suggests this to show alleys. In Shoreline, our new development's main roads look like alleys!

NEGATIVE FEATURES EXAMPLE OF SINGLE-FAMILY PROPERTY

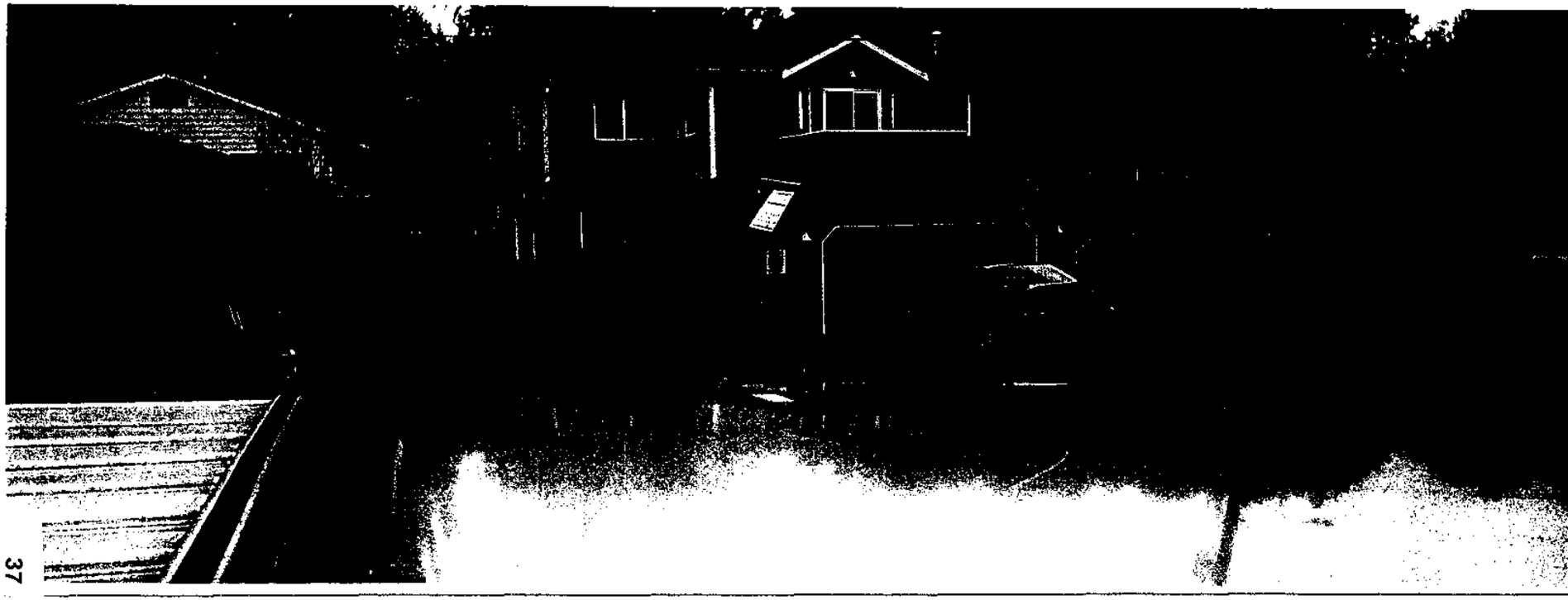


The house is on a steep hill. The hedge on the top retaining wall shows the line where the house above has it's property line. We watched this being built and saw how the retaining wall had to go higher and higher due to the hillside eroding. I would NOT be pleased if I were the property at the top!



Single family dwellings:

Problems: Way too much house(s) for the land size. Two units, one set right behind the other. Width of the front house is barely larger than a one stall garage. It is three stories with the 3rd story cantilevered over the drive to the rear building. The entry door on the house is immediately off the drive; the drive is narrow and is walled in by the house on one side and a fence on the other side. In addition to being an atrocious example of density, this type of arrangement also makes it dangerous for anyone in the front house to leave their building!



37

19836 Palatine North

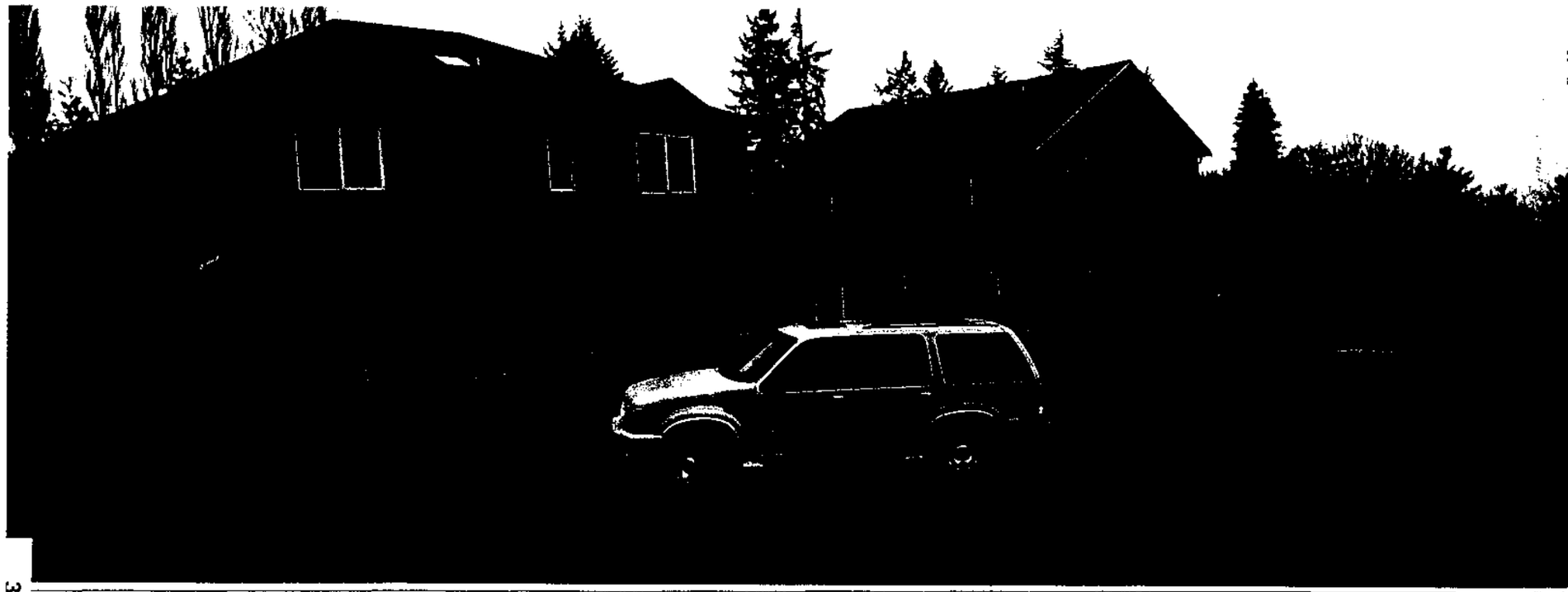
Cul-de-sac, Box house out of character with neighborhood and too large for lot. This lot was permitted by acquiring a small strip of land from the lot to the North, then after construction the strip was deeded back to the original lot.

38

NW 204th Richmond Beach (looking East Northeast)

Crowded houses. Sub standard lots, and no play yards. Otherwise these appear to be well constructed luxury view homes.

These are definitely not in character with the surrounding neighborhood.

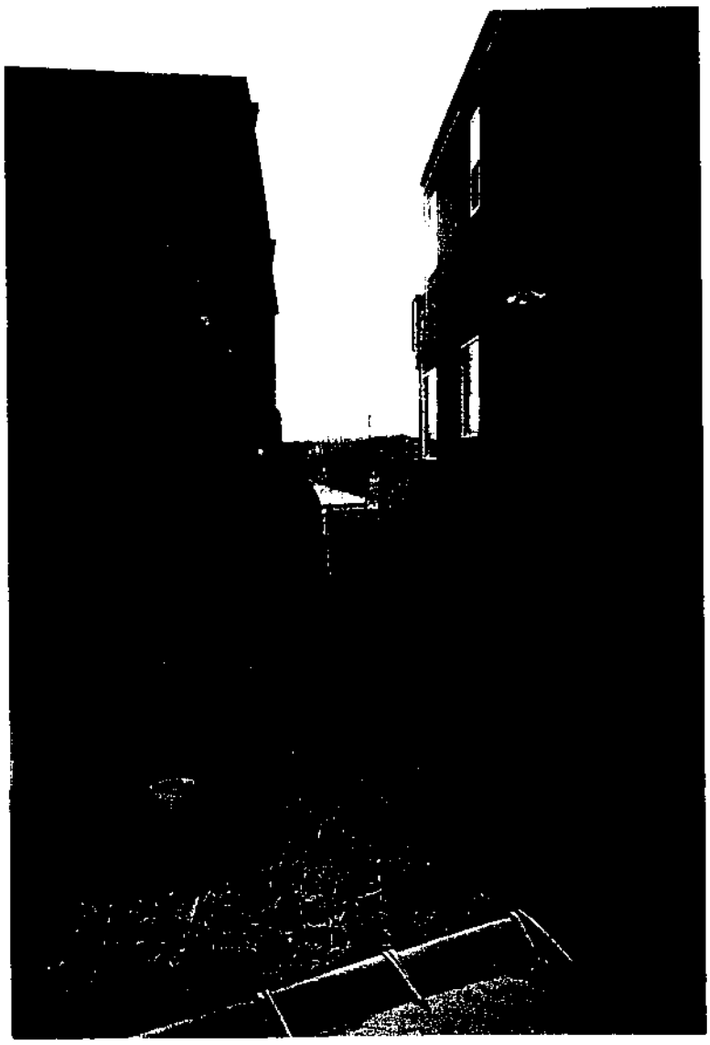


39

19361 8th NW (looking South Southwest)

1) This is a predominant rambler, large lot neighborhood.
2) An Eye sore to this once beautiful neighborhood.
3) Two story houses out of character with neighborhood and too large for lot. All trees removed. The access road is a hammerhead. The development is on the high ground and will produce run off to the Southwest.
4) Three more homes are being built across the street.
5) It appears that the two projects will share the made storm water retention system. Please see 195th and 8th NW.

SINGLEFAMILY NEGATIVE



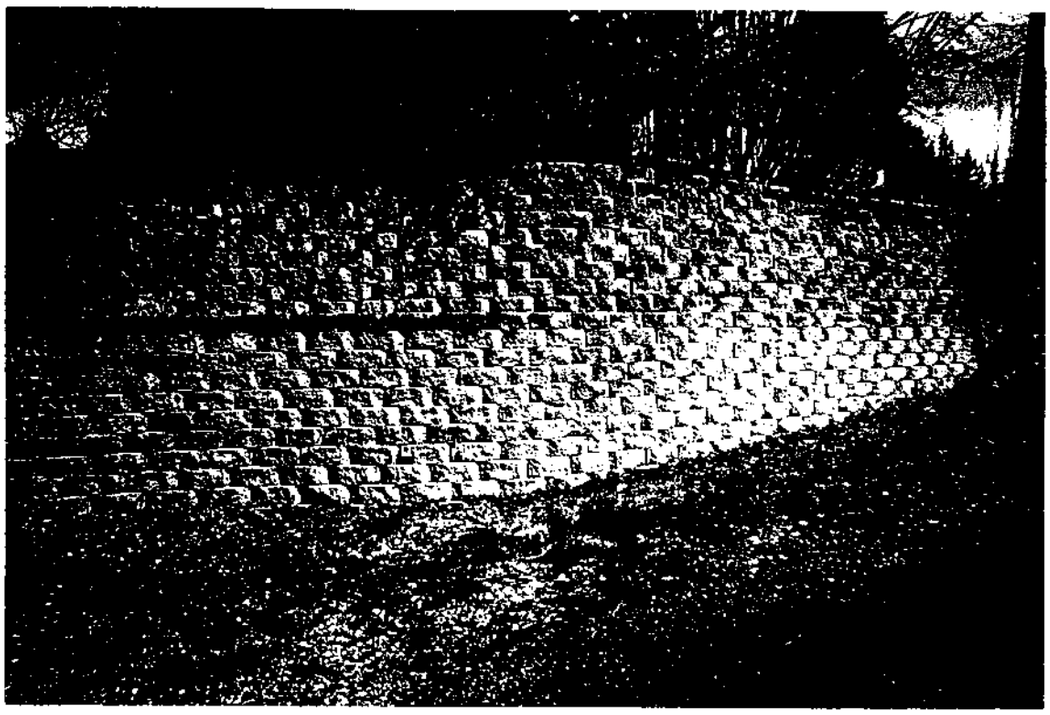
NO YARD FOR WATER ABSORPTION & LANDSCAPING.

THESE 2 ADJACENT HOUSES CREATE A WALL & BLOCK VIEWS OF HOUSES ON OPPOSITE SIDE OF STREET.

155 NE 99th Towards Aurora.

Fences need repairing and painting
some lawn shrubs On this side of fence.
Trees lonely, a walk way mowed-
help tremendously Do, for residents in Area.

Across from new Police Station Site
which I noticed has a huge water
hole - I Say really need fill in.



(1)

1 & 2 These 2 pictures were taken to demonstrate the inadequacies and unfairness of living in Shoreline. By ignoring the law and racing to get the job completed, this homeowner has shown that no official will force the corrections to be made.

(2)

BAD
NO SPACING,
WHERE THE HELL
ARE THE TREES?
REPLANT SOMETHING!

Council Meeting Date: June 7, 1999 **Agenda Item: 6(b)**

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Aurora Pre-Design Study Alternatives Evaluation and Preliminary Preferred Alternative
DEPARTMENT:	Planning and Development Services and Public Works
PRESENTED BY:	Tim Stewart, Planning and Development Services Director Kirk McKinley, Transportation Manager

EXECUTIVE / COUNCIL SUMMARY

The Aurora Pre-Design Study alternatives have been evaluated based on the criteria presented to the Council at the April 19th workshop. Alternative 2, oriented to moving people, evaluated the most favorably against the evaluation criteria and has been unanimously recommended by the Citizens Advisory Task Force (CATF) and the Interagency Technical Advisory Committee (ITAC) as the preliminary preferred alternative to be further developed with changes made to reduce right-of-way impacts.

A public open house was held on May 11th at which the public was provided an opportunity to review the evaluation results and comment on the three alternatives. Comments collected at the open house indicate that Alternative 2 had the most support of the attending public, followed by Alternative 1. Alternative 3 received little support from the public. Public comment from the open house related primarily to right-of-way concerns and traffic/pedestrian safety.

The purpose of this agenda item is to present your Council with:

- A briefing on the results of our evaluation of the three design alternatives;
- A briefing on the response to alternatives evaluation results gathered from the open house process, the Interagency Technical Advisory Committee and the Citizen's Advisory Task Force;
- To brief your Council on key design issues that are of primary importance for partnerships and pursuit of project funding;
- King County Metro staff presentation on King County support for the project;
- WSDOT staff presentation on State support for the project;
- To brief your Council on near term work items that will be performed in June and July, and outline future briefings with the Council on this project.

Staff is requesting that your Council identify any questions, information needs or modifications to the preliminary preferred alternative at this meeting so that when we

return to you with a recommended design concept in August, we have developed the information you need to make that decision.

In addition to this agenda memorandum, there are several attachments to assist your Council in its review of the alternatives evaluation and consideration of the preliminary preferred alternative. These attachments include the Design Alternatives Evaluation Matrix (Attachment A), a King County Metro Transit Input summary regarding transit service in the corridor (Attachment B) and a report from Washington State Department of Transportation (WSDOT) Traffic Engineering entitled Traffic Improvements for Aurora Avenue (Attachment C). Also included as Attachment D are the generalized cross sections for the three design alternatives.

RECOMMENDATION

This presentation is an interim update on the status of the project. No formal decisions or approvals are requested at this meeting.

Approved By: City Manager LB City Attorney N/A

BACKGROUND / ANALYSIS

At your Council Workshop on April 19, staff and consultant presented you with an overview of the three proposed design alternative concepts to be analyzed against criteria. The three alternatives are described below and typical cross sections are included as Attachment D.

Alternative 1 – Local Access: This alternative is oriented to providing local access to businesses and properties along the corridor. It maintains a five lane cross section in the areas between intersections, and includes some sections of landscaped median, but for the majority of its length retains the center-left-turn lane. It has generous sidewalks and landscaping along the edges of the roadway. This alternative includes bus pullouts, and queue jump lanes at intersections (transit lanes at intersections which allow transit vehicles to get to the "head of the line" or through the intersection first. This alternative could include some on-street parking pockets.

Alternative 2 – People Mover: This alternative is oriented to moving people. It includes adding a business access transit lane in each direction, and a landscaped median island with left and u-turn pockets. The business access transit lane is available for bus movement and for general purpose vehicles for right turning movements. Landscaping would be provided between the sidewalks and the street as a buffer.

Alternative 3 – Regional Design: This alternative is oriented to providing for regional through traffic. It consists of two general purpose lanes in each direction, and one-way frontage/access roads for each direction. The general purpose lanes and frontage roads are each separated by a solid barrier. Left or U-turning movements occur only at intersections. The major intersections have grade separation (diamond-like interchanges) for through traffic. Landscaping could be provided as components of the barriers. It is assumed that transit would share the through lanes with general purpose traffic and use the transit flyer stops at interchanges. Transit access could be provided to frontage roads, and bus turn-outs would be created.

Thirteen evaluation criteria were identified by the CATF for use in the evaluation of alternatives. These criteria were selected to address the committee's primary design issues and concerns. Public input from the first open house was considered in the selection.

Following the April 19 Council Workshop at which your Council approved the alternatives and criteria for evaluation, the City's staff and consultants performed the evaluation of the alternatives. Each alternative was measured against each of the thirteen criteria approved by your Council covering economic, environmental, mode-choice and operations factors.

Each criterion was divided into a five-point rating scale. Each rating is made up of several reproducible quantitative and qualitative measures relating to the criterion. Someone appropriately knowledgeable on the subject applied each criterion to the alternatives. For example: an economic development specialist, Property Counselors,

performed analysis for the economic development criterion, a water resources engineer evaluated stormwater and water-quality implications, etc.

In order to facilitate visual comparison of alternatives, a graphical scale was used to differentiate the rating values. For each criterion, an open circle represents the least favorable rating and a completely filled circle represents most favorable. Filling of the circle by quarters represents the three intervening rating values.

Results of the Evaluation:

A matrix containing the complete evaluation results is provided in Attachment A. The evaluation results matrix contains a description of criteria, a rating legend and the rating of alternatives including several points of discussion which distinguish the differences between alternatives. A brief synopsis of the key criteria scoring is presented below.

Alternative 2 was found to have the highest funding feasibility (best likelihood of grant funding) score. Although the estimated cost of Alternative 2 is slightly higher than Alternative 1, Alternative 2 had a more favorable set of design features, a better regional/local transportation balance and provided more benefits in terms of traffic operations (level of service), safety and mode-choice. All alternatives were designed with the intent of meeting the city's level of service (LOS) goal of E (or 90% of intersection capacity).

Alternative 1 was found by a small margin to provide slightly more economic development potential than Alternative 2. The difference between them lies mainly in property access. Based on the ratings, Alternative 1 scored higher in terms of property access from an economic development perspective because it allows left turn access to most sites by retaining the existing two-way left-turn lane.

Alternative 1 was found to have the lowest right-of-way needs and impacts. This is due mostly to the fact that the only capacity improvement associated with this alternative occurs at intersections, where impacts are very similar to those in Alternative 2.

Alternative 2 was found to have the least impact on neighborhood spillover traffic. According to travel demand model results, Alternative 2 maintains a traffic balance among north/south roadways similar to what exists currently. Alternative 1 could be expected to shift significant traffic volumes to parallel routes including Meridian Avenue, Fremont Avenue and Dayton Avenue as well as onto roadways east of Interstate 5. Alternative 3 actually attracted some through traffic from I-5.

Alternative 2 provides the greatest improvement to transit operations. Transit travel times for the length of the corridor were modeled to be over 10 minutes faster for Alternative 2 compared to Alternative 1 (in fact, buses were shown to move through the corridor faster than cars). Due to the extremely congested conditions that would be expected in Alternative 1 which had bus pullouts, buses get trapped in pull-outs and stuck outside of the traffic lanes.

Pedestrian safety is improved the greatest with Alternative 2. Traffic safety is improved most in Alternative 3 due to its barrier separation and one-way frontage road operation.

Features of Alternative 2 such as the access management treatments, transit facilities and pedestrian crossings associated with median breaks provide the best combination of pedestrian amenity and safety. Alternative 1 due to the high number of traffic conflicts, on-street parking, heavy congestion and two-way left-turn lane provides the least improvement to traffic safety.

Attachment A includes more detailed information on all thirteen of the evaluation criteria.

Open House:

The third project Open House was held on May 11, 1999 to display the three Aurora Avenue alternatives and the results of the evaluation. The CATF members worked hard to outreach to the business community and as a result, many of the business owners along Aurora attended the Open House and several were present at the May 13th CATF meeting following the Open House. Over 60 questionnaires about the alternatives were received. Summarized below are the highlights of public input from the Open House:

- Mixed views and input on both sides of most issues.
- Majority supported Alternative 2; second highest support was for Alternative 1; few supported Alternative 3.
- Most want to limit impacts to businesses, including willingness to limit width of sidewalks and reduced road/section widths.
- Majority want to include/increase landscaping and aesthetic treatments.
- Majority want traffic and pedestrian safety improvements.
- Most adjacent business owners were concerned about the affect the designs would have on access to their businesses.
- Even split on support for transit lanes, although most are supportive of using the lane for business access.
- Much concern about the potential for spillover traffic into adjacent neighborhoods.

Preliminary Preferred Alternative:

Below are listed the initial design principles that the CATF has discussed and generally agreed upon. Generally, the preferred design will be based upon Alternative 2 with some refinements. The following changes and refinements will be made over the next several weeks to create the preferred alternative for presentation to your city council at your July 19th work session:

- Reduce intersection approach widths to a practical maximum (like 7 or 8 lanes) by averaging level of service plans in the corridor, and as off-set through the provision

of people movement capacity and mobility in the form of the "business access and transit lane".

- Provide ability at intersections for all pedestrians to safely cross (and include median refuge at intersections with pedestrian pushbuttons).

- Consider more landscaping or colored pavement in sidewalk areas to soften the look.

- Sidewalks will be provided on both sides of Aurora the entire length. Consider reducing the initial sidewalk width to no less than 8 feet to mitigate land impacts except in the 175th to 185th area which would have 12 foot sidewalks (plan for an ordinance that requires property owner expansion of sidewalk widths later at the time of redevelopment).

- Develop median breaks or intersections for business access and U-turns at least every 800-to-1000 feet (these details will be worked out during future design phases and will be based in part on the amount of traffic entering and exiting businesses).

- Use low growing drought resistant ground-cover and space trees in median to allow visibility across it.

- Add art, special light fixtures, pavement patterns (and coloring at crosswalks), street furniture, banners, unique bus shelters, etc. to dramatically enhance image and uniqueness of the streetscape and develop it differently than the standard design that has been constructed for most streets.

- Develop gateway designs at both ends of the project.

- Strengthen connections to the Interurban Trail.

- Develop a design for closure of Westminster Road between 158th and 155th by developing a southbound right turn lane at 155th Street and converting the existing road section to a driveway entrance to Aurora Square. Also, develop an elevated Interurban trail crossing through "the Triangle" that is integrated with future development of the Triangle (reserve the option to build above Westminister should we not be successful in closing the roadway).

- Re-align the street where possible to avoid property takes.

- As the final design is developed, work with WSDOT to obtain design approvals for lane width reductions, and look for opportunities to reduce (but not eliminate) the median width both to enable reduction of pavement widths, construction costs, and land impacts/acquisition.

- Other elements for the preferred design include: incorporate stormwater management improvements to accompany the project that follow the city's policies; traffic signal control and coordination technology (including coordination with Seattle

and Edmonds SR 99 signal systems); technology to enable transit priority operations; continuous illumination for traffic and for pedestrians; undergrounding of overhead utility distribution lines.

- Traffic signals will include audible elements for the sight-impaired, and wheelchair detection loops for wheelchairs.

- The City should establish a policy to retain or relocate existing businesses along the corridor, including those that do not own the land on which they are located. Consideration should be given to providing financial incentives to those businesses.

- Be creative and sensitive to the parking needs of businesses, including some potential clustered/shared parking lots.

- Modify the access to Firlands at 185th and 195th.

- Work with transit agencies for increased service and capital investment to support this project.

- Avoid neighborhood spillover traffic.

Other items on which the CATF has not completed it's discussion and which could be added to their recommendation include:

- What is the appropriate design for the space between the curb and the pedestrian sidewalk? Should it be grass or shrub landscaping strip (like Chuck Olson), tree grates (like Drift on Inn, or Shucks), or consist of special paving (brick) between curb and sidewalk.

- How are mid-block pedestrian crossings defined? Are they signalized? Should we include transit stops near these locations?
- In order to save the heritage of the red brick road, could it be relocated elsewhere?

SUMMARY

A preliminary preferred alternative has been identified by the CATF and ITAC based on evaluation results and public input. This preliminary preferred alternative requires refinement to address recommendations by the committees and the concerns of the public. Over the next two months the committees, city staff and consultants will be working to refine the preliminary preferred alternative into a final recommended design for presentation to your Council at your July 19 work session with requested action by you on August 23, 1999. An additional interim briefing to your Council is planned for July 6, 1999.

RECOMMENDATION

This presentation is an interim update on the status of the project. No formal decisions or approvals are requested at this meeting.

ATTACHMENTS

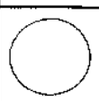
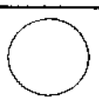
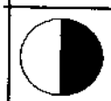
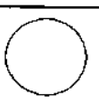
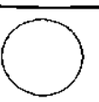
Attachment A: Evaluation Results Matrix
Attachment B: King County Metro Report on Transit Service
Attachment C: Traffic Improvements for Aurora Avenue (by WSDOT)
Attachment D: Cross Sections for Design Alternatives 1, 2, and 3.

AURORA CORRIDOR

TRANSPORTATION SOLUTIONS FOR SHORELINE'S MAIN STREET

Design Alternatives Evaluation Matrix

	Evaluation Criterion	LEGEND	Alternative 1
Economic Factors	**Funding feasibility** Qualitative evaluation of ease of funding expressed in a rating of relative difficulty. Based on type of project, preliminary cost estimate, and anticipated funding qualifications. Derived from 1998 TIB Application Instructions for UATA and TIA, PSRC Regional Project Evaluation Application for TEA-21 Funds, and Statewide STP Competitive Program Project Application	HIGHEST LOWEST	- Lowest cost alternative - Does not provide significant mobility improvements - Provides some facility for alternative modes - Provides some safety improvement for pedestrians - Requires the most amount of City / property owner funding
	Economic Development Qualitative evaluation of the extent to which alternatives further the City's economic development objectives of pursuing a strong and diverse economy while maintaining and improving the quality of life. In particular, Goal ED 10 of the Economic Development Element of the Comprehensive Plan calls for recognizing the Aurora Corridor as the economic core of the City with potential for revitalization, providing services, jobs, opportunities, and becoming an activity center for Shoreline.	MOST LEAST	- Provides only limited increase in capacity. - Provides maximum access and visibility for individual business properties. - Minimizes property take and maximizes property depth. - Additional capacity provided on east-west streets can enhance expansion opportunities. - Gateway, landscape, and pedestrian improvements enhance overall attractiveness for redevelopment.
	Capital Cost Quantitative "order-of-magnitude" measure of capital cost in dollars based upon conceptual definitions for alternatives.	LOWEST HIGHEST	$44 - 48 Million - Cost range affected by stormwater / Endangered Species Act mitigation costs. - High cost items include intersection widenings and wide sidewalks.
Environmental Factors	**Aesthetics and Image** Assessment of the quality of facilities and design included within the alternative in terms of measures of image and aesthetics compatible with the City of Shoreline's Urban Design Vision and Image of the corridor identified in the Comprehensive Plan.	MOST IMPROVEMENT LEAST IMPROVEMENT	- Wide sidewalks offer good pedestrian area-to-auto area ratio. - Street trees help to create a positive image for corridor. - Two-way left turn lane not pedestrian-friendly, does not provide positive image. - Overall: Reduced clutter and improved uniformity by consistent road edge improvement and removal of overhead utility lines, moderate aesthetic improvement, moderate visual, business and investment climate.
	Right-of-way Needs/Impacts Quantitative measure of right of way needs expressed in square footage based on preliminary conceptual design, number of parcels affected and number of businesses taken/relocated.	LOWEST HIGHEST	- 6 building relocations - 4,200 SF partial building take - 29,100 SF full building take. - 216,000 SF of right-of-way needed -164 affected parcels
	Air Quality and Energy Implications Assessment of the relative air quality impact expressed in terms of measures derived from anticipated traffic conditions in the year 2015 for each of the design alternatives. The quality of traffic operations improvements are evaluated as a combination of carbon monoxide(CO) by vehicle type(cars, trucks and buses) and Nitrous Oxides(NOx) by vehicle type.	LEAST IMPACT MOST IMPACT	- Intersection delay causes highest CO (kg/hr) of alternatives - NOx emissions lowest between alternatives. - Idling at intersections causes increased energy use.
	Neighborhood Spillover Traffic Assessment of the quantity and location of traffic diverted due to design and capacity features of each design alternative. The magnitude of Neighborhood Spillover Traffic impacts are evaluated as a combination of total volume diverted and the number of streets affected by diverted traffic.	LEAST IMPACT MOST IMPACT	- Diverts most traffic from Aurora (300 - 700 PM Peak vehicles) - Significantly impacts Meridian Avenue - Significantly impacts Dayton Avenue - Significantly impacts Fremont Avenue - Improved cross-street connections encourage neighborhood traffic
	Stormwater and Water-quality Implications Assessment of the relative stormwater facility needs and water quality impact expressed in terms of total impervious area and forecast average daily traffic related to the project design alternative. Stormwater and water quality implications are evaluated as a combination of the total area of impervious surface which is a combination of sidewalk area, roadway surface, and any structures associated with the design alternative.	MOST FAVORABLE LEAST FAVORABLE	- Smallest increase in impervious surface - Requires least amount of off-site mitigation - Stormwater runoff most like existing condition - Lowest total area of surfacing

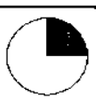
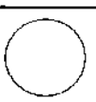
Alternative 2	Alternative 3
- Cost is slightly higher than Alternative 1. - Improves both local and regional mobility - Increases roadway width by providing a transit lane in each direction - Significantly improves safety for all users of the roadway - Provides most opportunity for funding partnerships	- Highest cost by far of all alternatives - Provides regional mobility at the expense of local access - Improves safety for all users of the roadway - Uncertain affect on economic development - Favors vehicular travel relative to pedestrian and transit
- Provides increase in traffic capacity. - Access to individual properties reduced as result of center median. - Increased roadway take renders many properties unsuitable. - Consolidated access points improve appearance of business district. - Gateway, landscape, and pedestrian improvements enhance overall attractiveness for redevelopment.	 - Provides greatest increase in traffic capacity. - Access to individual properties significantly reduced as additional turning movements and distance necessitated by frontage roads. - Visibility of properties at key development nodes (intersections) reduced by interchange ramps. - Property take is greatest at key development nodes to accommodate interchanges. - Gateway, landscape, and pedestrian improvements enhance overall attractiveness for redevelopment.
$49 - 54 Million - Cost range affected by stormwater / Endangered Species Act mitigation costs. - High cost items include intersection widenings and the continuous road widening.	 $130 - 142 Million - Cost range affected by stormwater / Endangered Species Act mitigation costs. - High cost items include interchanges, overcrossing structures and right-of-way.
- Planting strips with trees and center-planted median provide positive image. - Center-planted median helps break up visual impact of roadway pavement. - Roadway width at some intersections not pedestrian-friendly. - Overall: Reduced clutter and improved uniformity by consistent road edge and removal of overhead utility lines, moderate aesthetic improvement, moderate visual, business and investment climate.	- Several barriers to pedestrian travel exist, including concrete barriers/planters and absence of street-level pedestrian crossings. - Sidewalks only 8' in width. - Poor pedestrian area-to-automobile area ratio. - Overall: Reduced clutter and improved uniformity by consistent road edge and removal of overhead utility lines, minor to moderate aesthetic improvement, minor to moderate visual, business and investment climate.
 - 8 building relocation/demolition - 16,700 SF partial building take - 34,400 SF full building take. - 315,000 SF of right-of-way needed - 176 affected parcels	 - 31 building relocation/demolition - 30,200 SF partial building take - 202,500 SF full building take. - 512,000 SF of right-of-way needed - 185 affected parcels
- Lowest intersection delay between alternatives contributes to low CO (kg/hr) production. - NOx emissions similar to Alternative 1. - Lowest corridor average delay translates to lowest energy use.	- High free-flow speed provides lowest CO (kg/hr) of alternatives - NOx highest between alternatives. - High delay at intersections and high speeds translate to high energy consumption.
- Traffic distribution similar to existing condition (less than 50 PM Peak vehicles diverted) - No significant diversions to parallel routes - Business-access lane reduces attraction of traffic diversion	- Diverts traffic onto Aurora From I-5 and other roadways (600 -1600 PM Peak vehicles) - Limited frontage road capacity diverts traffic to neighborhood streets - Heavy impact to east/west routes
- Increases impervious surface by 25 percent over existing condition - Would require off-site detention facilities - Slightly greater total surface area than Alternative 1	 - Increases impervious surfaces by 100 percent over existing condition - Would require major conveyance and detention facilities. - Highest total surface area

AURORA CORRIDOR

TRANSPORTATION SOLUTIONS FOR SHORELINE'S MAIN STREET

Design Alternatives Evaluation Matrix

	Evaluation Criterion	LEGEND	Alternative 1
Mode-Choice Factors	**Transit Operations Improvement** Assessment of the quality of transit facilities included with the alternative in terms of measures of transit speed and reliability, rider comfort, and accessibility to transit service. The quality of transit improvements are evaluated as a combination of service reliability, travel time, waiting environment, and the quality of pedestrian connectors to provide access to transit stops.	GREATEST LEAST	- Transit vehicles get trapped behind excessive queues and cannot access bypass lane - Wide sidewalks and landscaping provide a comfortable environment for transit riders - Worst transit travel time reliability due to turnouts and transitions into traffic (northbound standard deviation = 4.8 minutes) - Northbound transit travel time twice that of alternative 2 (23.4 minutes).
	Pedestrian Safety Improvement Assessment of the quality of pedestrian facilities included within the alternative in terms of measures of pedestrian safety, comfort, and accessibility. The quality of pedestrian system improvements are evaluated as a combination of safety, comfort, and accessibility features that best match the characteristics for the alternative.	GREATEST LEAST	- Less pedestrian safety due to 2-way-left-turn lane - Lack of continuous median increase traffic conflicts - Fewer signal controlled crossings may cause "j-walking" - Wider sidewalks/landscaping/art/furniture and positive features - Lower traffic volume/speeds plus fewer lanes are positive features
Operational Factors	**Traffic Safety Improvement** Assessment of the relative improvement of traffic safety based upon geometric design, operational and environmental characteristics of the alternatives.	GREATEST LEAST	- Very high number of uncontrolled traffic conflicts - High number of crossing conflicts increases accident severity - Heavy congestion causes rear-end collisions - Two-way-left-turn lane and on-street parking are accident hazards - Lower speed is a positive feature
	Consistency with Comprehensive Plan goals Qualitative measure of effectiveness based on general interpretation of the Comprehensive Plan. Primary focus of the analysis is on the four policy areas in the plan that specifically address Aurora: Transportation Element, Land Use Element, Economic Development Element, and Urban Design Element. The analysis is to compare each alternative to the varying elements in the Plan. The Comprehensive Plan has several elements that address Aurora. The ratings are based on a review of the features of the alternatives as compared with the policies in the plan.	HIGHEST LOWEST	- Best pedestrian environment: wide sidewalks, crossings. - Transit queue jumps help transit move people at intersections. - Negative impact on neighborhood streets and parallel arterials - Accomodates gateways and other image enhancers. - Unlimited left turn access supports existing businesses.
	Traffic Operations Improvement Assessment of the quality of traffic design included with the alternative in terms of measures of anticipated traffic conditions in the year 2015 for each of the design alternatives. The quality of traffic operations improvements are evaluated as a combination of travel time, average speed, average intersection delay, and level of service.	GREATEST LEAST	- Two-way left turn lane causes mid-block delay. - Low average speed along corridor. - Large speed differential approaching intersections. - More intersections causes more total delay in the corridor. - Mid-block parking causes interference with through traffic. - Several intersections will operate at worse than level of service E. - Average system delay is 79.9 seconds per vehicle.

Alternative 2	Alternative 3
- Transit benefits are provided regardless of general purpose lane congestion - Wide sidewalks, landscaping and shelters provide a comfortable environment for transit riders. - Frequent crossing opportunities are located near bus zones - Continuous transit/right-turn lane provides for reliable service through the corridor (northbound standard deviation = 0.3 minutes) - Average transit travel time = 12.3 minutes (best of arterial alternatives)	- Limited stops limits access to local destinations. - Long distance between flyer stops and crossing opportunities may discourage riders. - Rider comfort may be low due to flyer stop location on the expressway. - Landscaping and sidewalks provide a comfortable environment for transit riders traveling between stops. - Travel time reliability is impacted by turnouts (northbound standard deviation = 6.7 minutes) - Average northbound transit travel time = 16.6 minutes
	
- Access management with median create safest pedestrian environment - Transit lanes with transit amenities generates more pedestrians - Median landscaping and street tree buffers create best pedestrian environment - Median/turn breaks provide more pedestrian crossing locations - Median and edge landscaping calms traffic and improves pedestrian comfort	- Expressway cross-section creates divided pedestrian environment - Raised barriers provide safest conditions for pedestrians - High traffic volumes and speeds create noise and reduce comfort for pedestrians - The wide cross-section for pavement allows less landscaping/art/furniture - Grade separated crossings require ramps and longer walking/crossing distances
- Moderate level of uncontrolled traffic conflicts - Few uncontrolled crossing conflicts reduces accident severity - Median and edge treatments help reduce traffic speeds and accident rates - Transit/right-turn-only lane provides safest access to businesses - Lower congestion levels reduces potential for rear-end collisions	- Lowest uncontrolled traffic conflicts of all alternatives - No uncontrolled crossing conflicts so accident severity is much lower - Opposing/through/business access traffic is divided with safety barriers - Uniform operating speeds on mainline roadways reduces accident potential - Lowest congestion levels reduces accident potential
	
- Pedestrian environment is good, most pedestrian crossings. - Best alternative for transit and people movement. - Capacity is improved (over Alt. 1); safer than Alt. 1. - Access is focused, and opportunities for shared driveways. - Business access is improved with transit right turn lane.	- Pedestrian environment is the worst. - Helps transit move through Shoreline but with fewer stops. - Capacity greatly improved via grade separated intersections. - Access to businesses is more complicated, but safer. - Aurora image changes to through traffic orientation.
- Average speed along corridor near posted speed - Right-turn lane and median reduce traffic turbulence - Level of service E or better achieved at each intersection (improvement of existing condition) - Average system delay is 65.1 seconds per vehicle	- No intersection delay along Aurora - Single-point diamond interchanges pose operational challenges - Average travel speed above posted speed - Significant delays experienced along frontage roads - Average system delay is 75.4 seconds per vehicle

King County Metro Transit Input on Aurora
May 19, 1999

Metro will attend your Council Workshop on June 7. The following information was prepared jointly by Shoreline and Metro staff.

What is the Current Transit Service in Shoreline and on Aurora?

Almost half of the weekday passenger activity on King County Metro Transit routes in Shoreline is on Aurora Avenue North or at the Aurora Village Transit Center. There are over 2,000 daily riders on Aurora in Shoreline. Currently King County Metro has 15 routes that provide service within Shoreline. Of these routes, most are oriented to Downtown Seattle, Northgate, or the University District. There are two local routes that connect Shoreline with Lake Forest Park or North Shore, and there is one route (#317) that runs into Downtown Edmonds/Ferry terminal. There are seven routes in Shoreline that are peak period "express" routes. Transit services on Aurora Avenue North provide connections to Seattle, Edmonds, Lynnwood, Mountlake Terrace, Lake Forest Park, Kenmore, Bothell, Woodinville, and Bellevue. The regional connections to the north or east, occur at the Aurora Village Transit Center. Transit service on Aurora Avenue North serves the major concentrations of commercial activity and multifamily housing in the city.

In February, 1999 Metro consolidated two existing routes creating the #358 which provides full-time frequent service between downtown Seattle and the Aurora Village Transit Center. The #358 provides a bus every ten minutes in the peak hours, 20 minutes midday and Saturday, and 30 minutes in the evenings and Sundays. This is an improvement over the previous service provided by #6 and #359 as the trips are faster and more frequent. The #358 attracts the highest ridership in Shoreline (approximately 2,000 daily boardings) and is the best target in Shoreline for additional service. The #358 connects to Community Transit routes at the Aurora Village Transit Center and to other key Metro routes at several transfer points in Seattle serving Northgate, Ballard, Greenlake, the University District, Wallingford, Capitol Hill, and the Seattle Center.

Other than the #358, there are five other routes that provide service on portions of Aurora, most between 175th and 200th.

Table 1: Aurora Bi-directional Bus Density by Section by Time of Day

Street Section	Routes	Peak Buses	Midday Buses	Evening Buses
205th – 200th	317	5	4	0
200th - 175th	358, 301, 314, 340, 943	20	10	4
175th – 145th	358	9	6	4

The peak hour service by the #358 is every 10 minutes (or six buses per hour peak direction).

What are the problems on Aurora now?

The current design and configuration of Aurora has an impact on transit service and on transit patrons. The lack of sidewalks on Aurora, lack of safe crossings, and the lack of sidewalks connecting from neighborhoods to Aurora bus stops discourage pedestrian access to the transit stops. Because of the lack of sidewalks (or permanent roadway improvements) Metro has been reluctant to invest in passenger shelters (shelters need approximately six by nine feet of space behind the back edge of the sidewalk). The lack of sidewalks also has an impact on the physically challenged community. Adequate loading pads for wheelchairs need to be eight by ten feet (which can include the sidewalk). Currently, the majority of stops along Aurora are accessible stops which means that the physically challenged can't use the Metro buses or they have to get to a stop that is accessible.

Operationally, from a transit perspective, the current configuration of Aurora is less than ideal. Because of the congestion and lack of lanes for transit, the buses are stuck in traffic, offering transit no competitive advantage. When buses pull off to load or unload passengers, they have difficulties getting back into the travel lanes. The congestion, lack of transit lanes, and inability to re-enter the traffic flow all contribute to the unpredictability of service and the length of time it takes to travel the corridor on bus.

How will access management (creation of driveways and focussing of turning movements) and upgrading the street to urban standards (curb, gutter and sidewalk) help transit?

The improvements in access management, sidewalks, and crossing safety on Aurora will make transit more attractive and increase ridership. Access management will improve the safety of both auto traffic and pedestrians. Access management will improve auto and pedestrian access to businesses. Sidewalks will improve the safety of pedestrians and transit riders and extend the range of pedestrians. Sidewalks and transit improve the mobility of senior citizens, youth and the physically challenged.

How will Business Access Transit (BAT) lanes (outside lane dedicated for transit and turning movements into and out of businesses) improve operations?

The Business Access Transit lanes combined with the currently funded transit signal prioritization technology will greatly improve the travel time, dependability, and better use the existing transit capital resources on the corridor. The more efficiently buses move through the corridor, the fewer capital (fleet vehicles) required to provide the same level of service. Improvements in transit speed and reliability are crucial to achieving attractive transit service. Poor on-time performance adds uncertainty to wait times and makes transit less attractive. Added running times and poor reliability cost operating hours, which instead could be added to other Shoreline services. For example, with the current route #358 schedule, an increase in afternoon running time of only five minutes could increase the required number of buses by one, which represents hundreds of annual hours of service.

The Alternative Analysis included analysis of Transit Operations Improvements based on year 2015 traffic. Among the three alternatives, Alternative two had the best transit operations improvements. The analysis examined transit travel time in the peak hour (the amount of time it took to get through Shoreline on Aurora), and travel time reliability (measured in minutes of deviation) between the alternatives.

Table 2: Evaluation of 2015 Service for the Three Alternatives

Measure	Alternative One	Alternative Two	Alternative Three
Total Travel Time	23.4 minutes	12.3 minutes	14.8 minutes
Reliability/Deviation (minutes)	5.3 minutes	0.7 minutes	2.9 minutes

As Table 2 indicates, buses on the Alternative Two configuration will take the shortest amount of time, and will be the most reliable. The addition of sidewalks, lighting, curbs, landscaping strip, and pedestrian will improve conditions for passengers waiting and connecting to other bus routes.

How Metro will Respond to Improved Facilities on Aurora?

Metro staff is pleased with the potential of the Business Access Transit lanes on Aurora. They are currently discussing their level of funding on Aurora to supplement or add to Shoreline's Aurora project. In addition to the potential contribution from Metro to our Aurora project, they are considering adding increased service on Aurora and in Shoreline. Metro and Shoreline staff will work closely on developing a transit service improvement plan for future service improvements.

Attachment C

Traffic Improvements for Aurora Avenue

Prepared by WSDOT, May 1999

The Need for Traffic Safety Improvements.

Aurora Avenue North through the City of Shoreline experiences some of the highest accident rates for a facility of its type in the State of Washington High accident rates are due to the lack of adequate control of access, traffic congestion and the lack of adequate pedestrian facilities. Nearly the entire length of Aurora Avenue through Shoreline is above the statewide average accident rate for urban principal arterials. In some locations the rate is fully three times higher than the state average. WSDOT calculates the economic loss that results from crashes in Shoreline on Aurora Ave. to be in excess of $10,000,000 per year.

Accident data can be broken down to rate by intersection and segment. Every two years WSDOT identifies High Accident Locations (HALS) and high accident Corridors (HACS) based on the number and severity of accidents on similar sections of roadway throughout the state. Four high accident locations are located on Aurora Avenue within the Shoreline City Limits – From N 145th to N 155th, From N 160th to N 163rd, from N 165th to N 175th and from N 195th to N 205th.

What Can Be Done About Traffic Safety?

Many factors contribute to the occurrence of traffic crashes. One way that roadway designers can reduce accidents is to control the number of places that vehicles or pedestrians cross paths or is in "conflict." By doing that we manage access on and to the roadway system.

What is Access Management?

Access management is a comprehensive approach to managing property access to roadways. It involves planning, regulatory and design strategies aimed at providing access to land development, while maintaining the safety and efficiency of travel on adjacent roadways. This is achieved by managing the location, design, and operation of driveways, medians, median openings, signals, and street connections to a roadway. Other techniques include consolidating access as much as possible along major roadways through the use of internal roads, shared driveways, interconnected parking lots, and other methods. The result of that is to reduce the "conflicts" between motorists. It is proven that we can dramatically reduce crashes by implementing better access management on streets like Aurora.

The greatest need for access management is along arterials that are expected to serve both property access and through traffic functions. To balance these competing objectives, limits on roadway access need to be supplemented with strategies for maintaining or improving the accessibility of adjacent property development. One such strategy is to assure that areas

planned for development have an adequate supporting network of local streets. Other strategies may include street extensions, access roads, unified site circulation plans, side street connections, or property cross access. In summary, access management seeks to limit and consolidate access along major roadways to reduce conflicts, while promoting internal circulation systems for development that are well connected to each other and to the local street system.

Importance of Access Management to Aurora Avenue

Roads are an essential public resource. They are also costly to improve or replace. Now that we are experiencing a transportation funding shortfall, effective system management is more important than ever before. By managing roadway access, state and local governments can extend the life (i.e. capacity) of the existing system of roads and highways, reduce the need for costly improvements, increase traffic safety, and even improve the quality of the built environment.

Without access management, major roadways can deteriorate prematurely. Symptoms include an increase in vehicular crashes, accelerated reduction in roadway capacity, unsightly strip development, neighborhoods disrupted by through traffic due to overburdened arterials, and homes and businesses impacted by the need to widen roads.

Not only is the lack of access management costly for the public, it adversely affects corridor businesses. Over time, closely spaced or poorly designed driveways make it more difficult and hazardous for customers to enter and exit properties. Access to corner businesses may be blocked by queuing traffic at intersections. Customers will begin to seek out businesses with safe, convenient access and avoid patronizing businesses in areas of poor access design. What occurs is the cumulative effects of poor access design begin to impair, rather than improve, the accessibility of individual businesses.

Benefits of Access Management

Listed below are some of the primary benefits of access management.

Reduced traffic crashes and crash potential. For more than two decades, various studies have documented how good access management can significantly reduce the number of traffic crashes, including fatal, injury and property damage crashes.

Preserved roadway capacity and useful life of roads. One major contributor to congestion is unnecessary or uncontrolled points of conflict caused by too many opportunities to turn onto or off the road. Good access management preserves a road's capacity to move vehicles at the posted speed and extends the useful life of the road.

Fewer conflicts with pedestrians. Median pedestrian refuge areas and improved driveway spacing and design lead to better pedestrian access. Pedestrian traffic signals at strategic locations can prevent people from having to sprint across the roadway. Improved pedestrian access means more walk-up traffic and exposure for businesses.

Decreased travel time. Good access management helps motorists get to their destinations with fewer delays. Vehicles tend to travel closer to posted speeds on roads where access is managed. Studies show conclusively that delays are considerably less during peak hours on roads with good access management.

Improved access to property. The quality of property access is more than a function of the number of driveways. It also depends on the design and spacing of driveways, the ease and safety of pulling off or onto a road, distance from intersections, and traffic signal sequencing. In some cases, this may not be direct access from a major arterial, but controlled access from a side street or frontage road. Businesses with safe and easy access are more inviting to shoppers and visitors and are the scenes of fewer traffic crashes.

Improved air quality. When traffic moves efficiently, vehicles burn fuel efficiently and generate less air pollution. Since the bulk of air pollutants in most urban areas are related to auto and truck traffic, efficient road systems can significantly reduce air pollution.

Improved business parking lot circulation and amenities. Combining and relocating driveways can mean more space available for parking, parking lot circulation, and landscaping.

Improved aesthetics and community development. Construction projects where access management techniques are used often result in development of landscaping, undergrounding of overhead utilities, construction of sidewalks, and other pedestrian-friendly facilities. These improvements often lead to higher property values for adjacent land.

Maintaining travel efficiency and related economic prosperity. Economic prosperity depends on a safe and efficient transportation system. A well designed access management program can greatly contribute to a safe and efficient transportation system which is key to every community's economic base.

State Legislation on Access Management

In 1991 Washington's state legislature, recognizing the many benefits of access management adopted Revised Code of Washington (RCW) Chapter 47.50, Highway Access Management. This RCW directed the Washington State Department of Transportation (WSDOT) to develop two sets of rules to be included in the Washington Administrative Code (WAC).

Important points of RCW 47.50 – Highway Access Management included:

- That regulation of access to the state highway system is necessary in order to protect the public health, safety, and welfare, to preserve the functional integrity of the state highway system, and to promote the safe and efficient movement of people and goods within the state.
- The access rights of an owner of property abutting the state highway system are subordinate to the public's right and interest in a safe and efficient highway system.
- Every owner of property which abuts a state highway has a right to reasonable access to that highway (unless access rights have been acquired). The right of access to the state highway may be restricted if reasonable access can be provided at another public road that abuts the property.
- Cities and towns shall, no later than July 1, 1993, adopt standards for access permitting on streets designated as state highways that meet or exceed the state's standards.
- No connection to a state highway shall be constructed or altered without an access permit. Unpermitted connections to the state highway in existence on July 1, 1990 shall not require the issuance of a permit and may continue to provide access to the

state highway system unless the permitting authority determines that such a connection does not meet minimum acceptable standards of highway safety. A permitting authority may require that a permit be obtained for such a connection if a significant change occurs in the use, design, or traffic flow of the connection or of the state highway to which it provides access.

The State Department of Transportation has the responsibility to review and the authority to approve roadway channelization designs in order to assure compliance with design standards and adequate safety design.

Features of the Design Alternatives that Support Safety Improvement

Access management aims to limit the number and type of conflict points to simplify the driving task and thereby improve safety. Measures related to conflict point reduction include installing a non-traversable median and restricting the number, spacing and design of driveways.

Alternative 2 represents the most comprehensive use of these traffic safety design features. It is anticipated that these features will help improve traffic safety and reduce accident rates along Aurora.

Pedestrian Design

Fifteen percent of the states fatalities are pedestrian/vehicle collisions even though they represent only 1percent of the total number of accidents. On Aurora Avenue from Federal Way to Everett fully half of the States pedestrian collisions occur every year. WSDOT has focused on improving pedestrian safety on every foot of Aurora Ave. WSDOT has budgeted $400,000 to a project aimed at addressing pedestrian needs in the near term here in Shoreline. We anticipate that as Shorelines final vision for the corridor is developed that we will also be a partner in addressing other safety needs in the corridor.

Good pedestrian design incorporates the basic elements of good urban design. Provision of sidewalks, good lighting, well designed bus stops, frequent safe crossing opportunities, raised median refuge and good sight lines are all elements that WSDOT values in new design concepts to improve pedestrian safety.

Alternative 2 represents the most comprehensive use of these traffic safety design features. It is anticipated that these features will help improve traffic safety and reduce accident rates along Aurora.

The Effects of Congestion on Safety

Typically half of all traffic collisions occur at signalized intersections on the busy arterials in the Northwest Region of WSDOT. Congestion not only increases rear end accidents as traffic slows down because of standing queues at intersections but also feeds the cycle of red light running that has become all too common on our arterial highways in the region. People stuck in traffic tend to take more chances as their frustration level rises and "road rage" related accidents along Aurora have risen with the amount of congestion.

In addition to red light running, excessive speed is an issue that we frequently deal with on urban streets. That is also the case on Aurora. WSDOT has recently worked with Shoreline

to reduce the speed limit throughout the City. While this is a good first step, there are design elements that can be incorporated that have been demonstrated to reduce travel speeds on urban arterials. Those include provision of sidewalks and a raised landscaped median.

Alternative 2 represents the most comprehensive solution to deal with congestion and the "calming" of traffic on Aurora.

Driver Behavior and Safety

Unfortunately we still live in a society where some people drink and then get behind the wheel of a car. The drinking driver is a significant problem on SR 99 in King County. WSDOT is participating along with a score of health, enforcement and public works organizations in a safety corridor program sponsored by the Washington Traffic Safety Commission to reduce the number of impaired drivers on SR 99 in King County.

Dealing with Congestion

Providing for regional trips and transportation alternatives is a focus for WSDOT. As you know the Puget Sound Region has among the most congested freeways in the nation. The Texas Transportation Institute says that the Seattle metropolitan area is the 6th most congested in the country. Unfortunately, even with the most optimistic revenue projection, that congestion is anticipated to worsen in the future. There is simply not spare capacity on I-5. Regionally we need to wring the most possible capacity out of our crowded transportation corridors if we are to maintain our mobility. It is crucial that the capacity of our regional routes such as SR 99 is maintained.

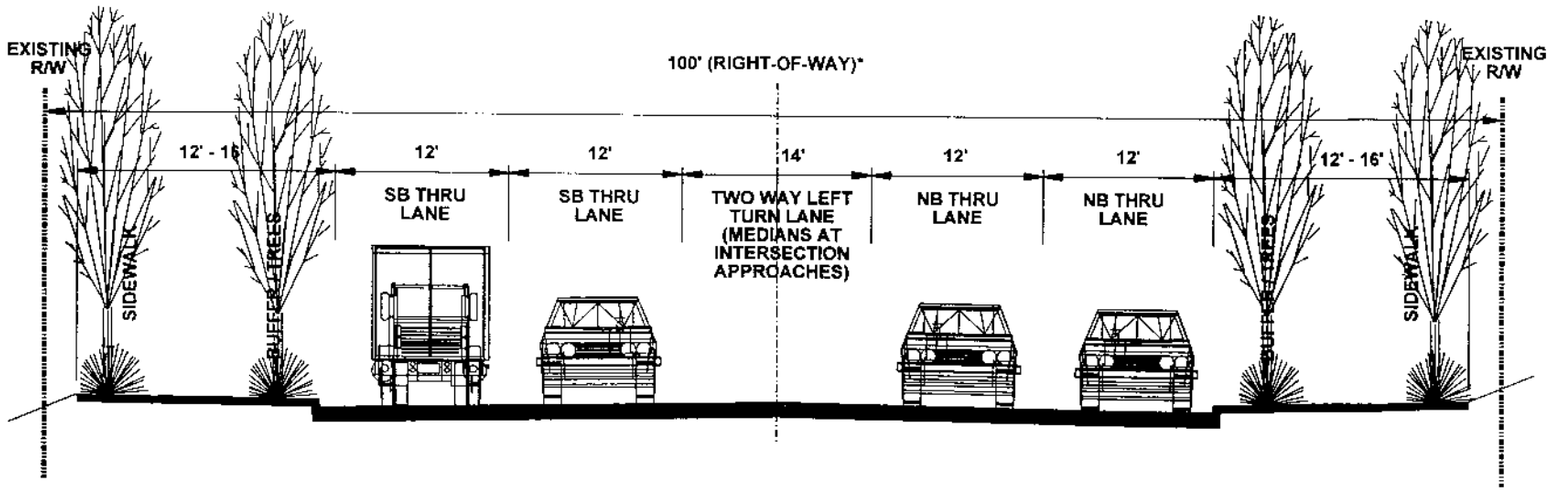
On Aurora it is projected that the number of vehicles on the road will continue to grow as Shoreline grows. It is important that there be a roadway network that supports that demand or traffic will spill out of the arterial system into the local roadways that are not designed to handle traffic and through neighborhoods where having more cars is inappropriate.

Alternative 2 provided the best possibility of meeting the City Comprehensive plans goal for the Aurora corridor of providing for basic mobility (level of service).

WSDOT has embraced our regional strategy to provide a road network that is compatible and complementary with providing a swift and reliable transit system for Puget Sound. Part of that effort is WSDOT's HOV system on the regions freeways. Part of the system is the network of park and ride facilities such as the one at SR 99 and 192nd Street that WSDOT built to support the regional HOV system. Making arterials work for transit is also an important aspect of making a regional transportation system work.

WSDOT appreciates that deploying transit signal priority systems to improve transit operations is part of every alternative envisioned by Shoreline.

We also feel that Alternative 2 represents the most comprehensive alternative to provide for improvement of transit operations on Aurora.



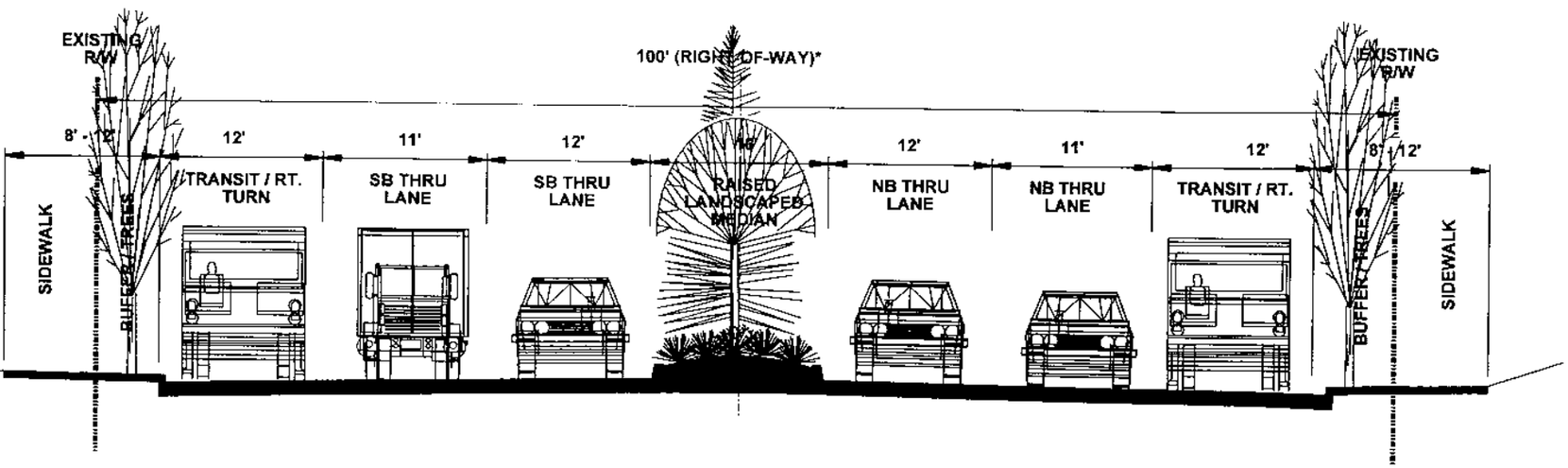
ALTERNATIVE 1
TYPICAL SECTION

* THIS CROSS SECTION ILLUSTRATES A 100' RIGHT OF WAY WIDTH.
ACTUAL RIGHT OF WAY WIDTH ALONG AURORA AVENUE VARIES FROM 90 - 110 FEET.

AURORA CORRIDOR
TRANSPORTATION SOLUTIONS FOR SHORELINE'S MAIN STREET

Hough Beck & Baird Inc.
LANDSCAPE ARCHITECTURE PLANNING URBAN DESIGN

CH2MHILL



ALTERNATIVE 2
TYPICAL SECTION

* THIS CROSS SECTION ILLUSTRATES A 100' RIGHT OF WAY WIDTH.
ACTUAL RIGHT OF WAY WIDTH ALONG AURORA AVENUE VARIES FROM 90 - 110 FEET.

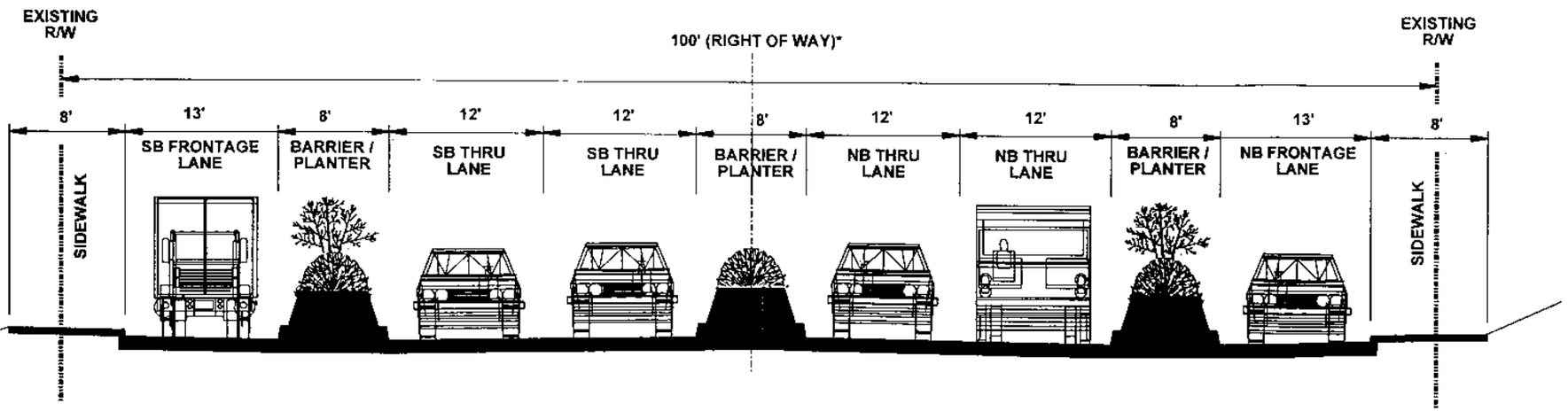
AURORA CORRIDOR

TRANSPORTATION SOLUTIONS FOR SHORELINE'S MAIN STREET

CH2MHILL

FILE NAME: 4744B10

05-APR-1999 16:55:53



ALTERNATIVE 3
TYPICAL SECTION

* THIS CROSS SECTION ILLUSTRATES A 100' RIGHT OF WAY WIDTH.
ACTUAL RIGHT OF WAY WIDTH ALONG AURORA AVENUE VARIES FROM 90 - 110 FEET.

AURORA CORRIDOR

TRANSPORTATION SOLUTIONS FOR SHORELINE'S MAIN STREE

CH2MHI

FILE NAME: 4744E

05-APR-1999 16:56:16