

CITY OF COOS BAY
Agenda Staff Report

MEETING DATE	AGENDA ITEM NUMBER
October 6, 2015	

TO: Mayor Shoji and City Councilors

FROM: Jim Hossley, Public Works Director *JH*

Through: Rodger Craddock, City Manager *RC*

ISSUE: Discussion of a Local Improvement District - Nutwood Avenue and 11th Street

BACKGROUND:

On March 17, 2015 Council considered a petition from neighbors along Nutwood Avenue and 11th Street to form a Local Improvement District (LID) to pave a portion of the gravel roads in their neighborhood, Nutwood Avenue and 11th Street. Council directed staff to move forward with preliminary plans and estimates for the improvements. Council requested that staff get costs estimates for three different options; one meeting the City's design standards which includes a 28 foot wide street section, sidewalk and curbs on both sides; the second being a 28 foot street section only; the third being a 20 foot street section only.

The City contracted with The Dyer Partnership to prepare preliminary plans and cost estimates for three different options. The estimated costs range from \$361,000 for a 20' wide pavement section to \$703,000 for the City's standard street section with sidewalk and curb. Needless to say this cost was more than the neighbors cared to bear. The engineer, staff, and neighbors met to attempt to find a less expensive solution. By shortening the length of the improvements and eliminating improvements to the already paved portion of Nutwood at the intersection of Coos Bay Blvd, the estimated cost of paving a 20' wide section ranges from \$171,000 to \$188,000. All estimates include construction costs, a 10% contingency, administrative cost, engineering design cost, and engineering construction services.

Per the attached letter from Blair Holman and Ginny Tabor, the neighborhood has not been able to reach consensus on paying for the improvements through and LID. Blair and Ginny state *"The design standards set by the City may be ideal for new subdivisions, but certainly do not seem appropriate for established neighborhoods. We would ask that the City Council give consideration to relaxing the design standards for those established neighborhoods in the City where the residents might wish to improve their roads. Road improvements that were done before the design standards were established are still working. Dead-end streets with simple pavement application such as those west of North 10th Street are a perfect example. As it currently stands, it appears that if you are currently living on an unimproved gravel road with the City of Coos Bay, you will continue to do so with little hope of improvement. We find that very*

disheartening in this day and age.”

The City standards do not differentiate between existing and new streets. While such differentiation may be warranted, reduction of many of the design standards may not be prudent. When doing significant infrastructure improvements in the City’s right-of-way, the City is obligated to meet generally accepted engineering design standards for safety. When paving streets we have to design for both vehicle and pedestrian safety. There are also accessibility (ADA) standards, floodplain, and environmental considerations. We can’t typically just pave an existing gravel road as it exists. Many are very narrow and their width does not meet any generally accepted standards. The road bed and wearing surface must be designed to handle traffic loads. We also have to accommodate the additional run-off created from paving a street so as not to impact adjacent properties.

ADVANTAGES:

Implementing the LID to pave the streets will improve neighborhood access and increase neighborhood property values. Completing the project will relieve City maintenance crews from having to grade the street.

DISADVANTAGES:

Potential LID property owners are no longer in support of the project. The estimated total cost for the project is more than property owners are willing to pay.

BUDGET IMPLICATIONS:

Funding for this project would typically come from Special Improvement (LID) Fund 15. In the FYE 16 budget, there is a carryover balance of approximately \$144,000. The cost estimate for the paving project ranges from \$171,000 to \$703,000 depending upon the chosen option.

ACTION REQUESTED:

As the property owners in the proposed LID have not reached a consensus on moving forward with establishing the LID and constructing the road improvement project, staff recommends that the Council take no further action on this matter.

ATTACHMENT:

Letter from Blair Holman and Ginny Tabor
Director’s Report

Re: Proposal for formation of a Local Improvement District (LID) to provide paving for portions of Nutwood Ave., N. 11th St., Orchard Ave. and N. 12th St.

October 6, 2015

Mayor Shoji and City Council Members,

I am Blair Holman, and with my wife, Ginny Tabor, live at 2076 N. 11th Street in Coos Bay. We came to the March 17, 2015 City Council meeting requesting that the City Council consider approving a draft local road improvement district (LID) in order to upgrade the gravel roads for portions of Nutwood Ave., N. 11th St., Orchard Ave. and N. 12th St. The Council gave their approval at that time directing the Public Works Department to prepare a written report with three design scenarios pursuant to Coos Bay Municipal Code 13.15.040. The required petition was submitted and we paid the \$1,000 fee.

After neighborhood discussions, the project was reduced to include only Nutwood Ave., N. 11th St. and a portion of Orchard Ave.

On June 22nd, 2015, we received the initial draft study from the engineer detailing the costs to satisfy the city's requirements. Of the three scenarios, only the third scenario of a road 20' wide with no curbs, gutter or sidewalks was appropriate for the existing neighborhood. We were shocked and astounded that the proposed cost of this scenario was almost \$400,000 for improving the approximately two and one-half blocks of existing road. We learned later that this cost also included improving the already-paved turn off/intersection from Coos Bay Blvd. to Nutwood. This intersection has been a safety hazard ever since it was created. When turning onto Nutwood from Coos Bay Blvd., a driver is unable to see the road in front of him. It is potentially very dangerous for not only children and pets of the neighborhood but also vehicles. This intersection is a city matter and not one that should be paid for by the neighborhood.

Several neighbors met with the engineer and Mr. Hossley in early September to discuss ways to lower the proposed costs of the requested improvements. The project was further reduced to include only Nutwood Ave. and N. 11th St. to Orchard Ave. It was decided to consider paving only one and one-half blocks of existing road with no curbs, gutters, etc. in order to maintain the rural nature of the streets and be more economically feasible and acceptable to the neighborhood.

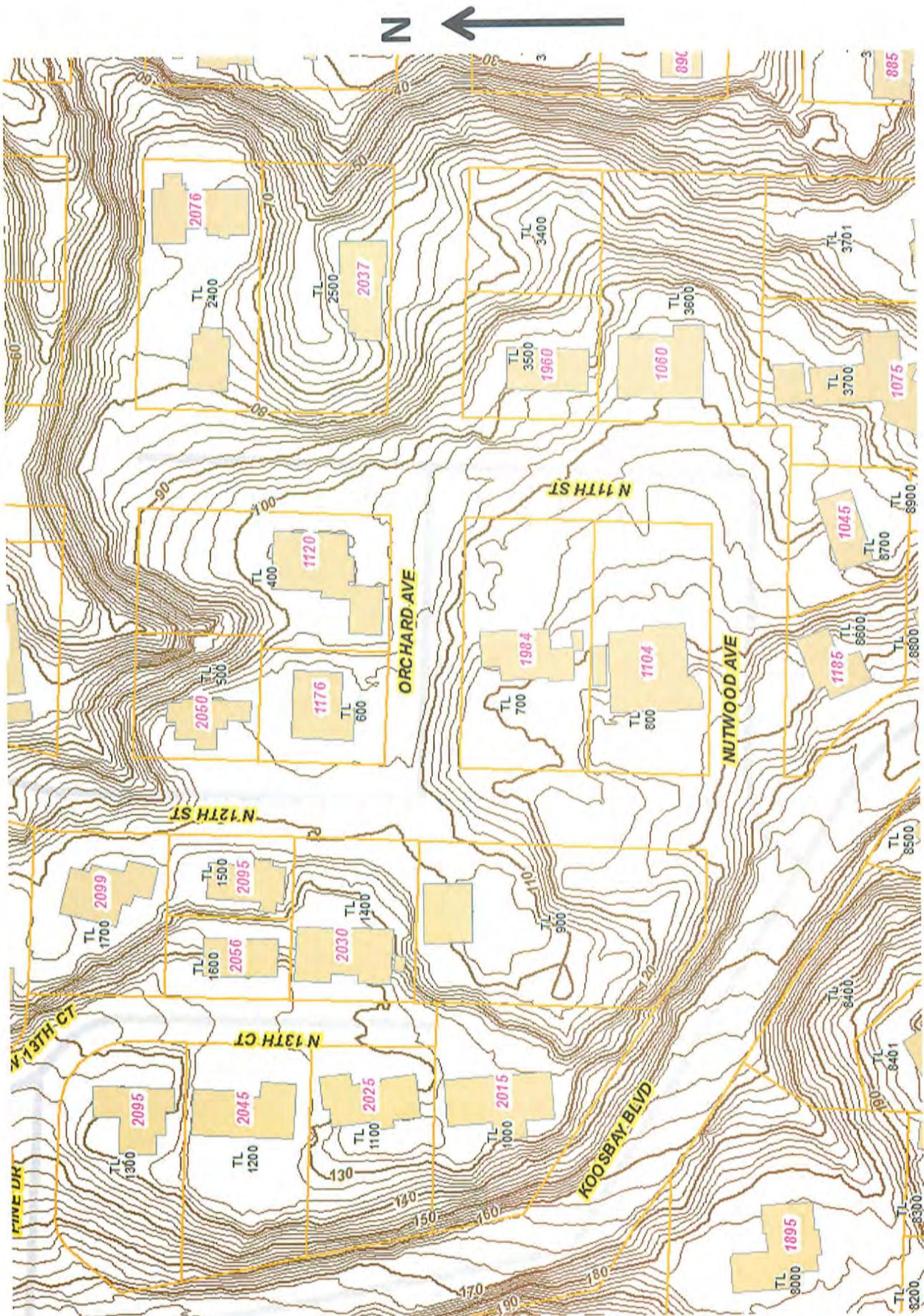
We were again shocked when we learned that the revised estimate was nearly \$200,000. \$200,000 to pave one and one-half blocks of existing city street! We believe this high cost makes it impossible to reach a consensus within the neighborhood to consider participating in a local improvement district (LID). We thought, with a more reasonable cost, we could make it work. Apparently not.

The design standards set by the City may be ideal for new subdivisions, but certainly do not seem appropriate for established neighborhoods. We would ask that the City Council give consideration to relaxing the design standards for those established neighborhoods in the City where the residents might wish to improve their roads. Road improvements that were done before the design standards were established are still working. Dead-end streets with simple pavement application such as those west of North 10th Street are a perfect example. As it currently stands, it appears that if you are currently living on an unimproved gravel road with the City of Coos Bay, you will continue to do so with little hope of improvement. We find that very disheartening in this day and age.

Thank you for your time and consideration.

Blair Holman

Ginny Tabor



Topographic Relief of Proposed LID Area



MEMORANDUM

DATE: June 22, 2015
TO: City of Coos Bay
FROM: Tom Hart, P.E.
PROJECT: Nutwood Avenue Local Improvement District
SUBJECT: **Street Improvements Feasibility Report**

Introduction

The purpose of this study is to review three alternatives for the proposed Nutwood Avenue Local Improvement District (LID). The project limits begin at the intersection of Coos Bay Boulevard and Nutwood Avenue, then runs easterly along Nutwood Avenue, and then northerly along N. 11th Street.



Figure 1
Vicinity Map

The alternative improvements include:

- Alternative A is for a standard street width of 28 feet which consist of two ten foot travel lanes, eight feet of parking on one side, curb and gutter, and a five foot wide sidewalk on both sides. The estimated direct construction costs and indirect costs for Alternative A range is between \$639,000 and \$703,000 dollars.

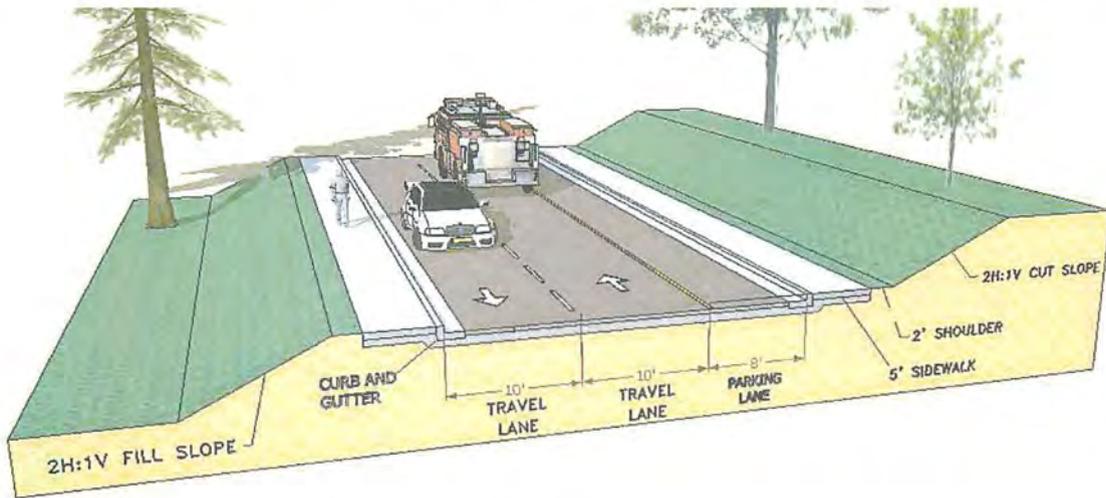


Figure 2
28 Foot Wide Standard Street Section

- Alternative B is for 28 feet of pavement which consist of two ten foot travel lanes, an eight foot wide parking lane, a two foot gravel shoulder on both sides and a drainage ditch on the uphill side. The estimated direct construction costs and indirect costs for Alternative B range is between \$444,000 and \$488,000 dollars.

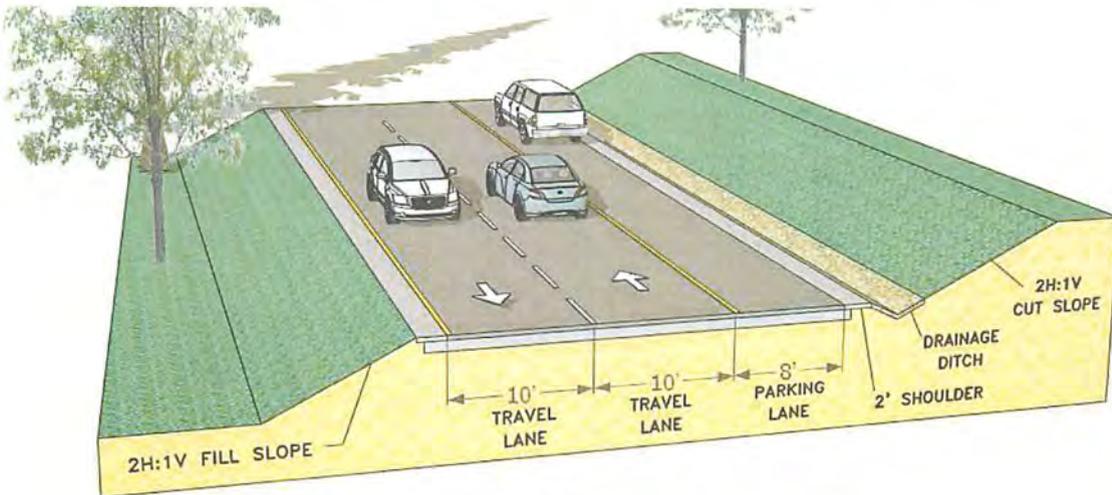


Figure 3
28 Foot Wide Rural Street Section

- Alternative C is for a rural street section with 20 feet of pavement consisting of two ten foot travel lanes, a two foot gravel shoulder on both sides and a drainage ditch on the uphill side. Parking is not allowed on the street. The estimated direct construction costs and indirect costs for Alternative C range is between \$361,000 and \$397,000 dollars.

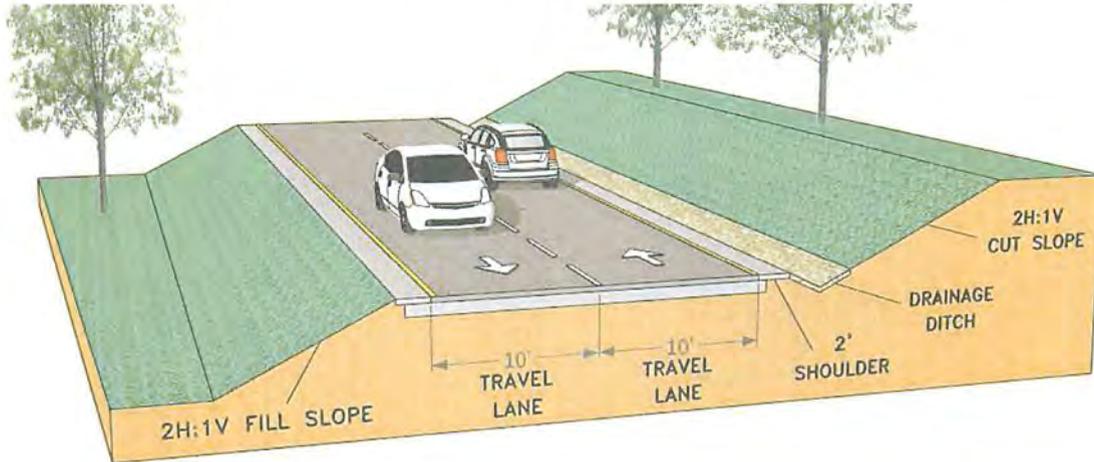


Figure 4
20 Foot Wide Rural Street Section

- N. 11th Street (north of Orchard Street) services one residential house. On Google Earth this section of street is referred to as Pine Avenue. This report will follow the naming convention of the recorded plat which refers to Pine Avenue as the unimproved right of way that is north of and parallel to Orchard Street. A 12 foot wide alley improvement is proposed to serve one house. This street section consists of 12 feet of pavement, four foot wide gravel shoulders on each side and a drainage ditch on the uphill side. Parking is not allowed on the street. Construction costs for this section are included in each of the alternatives.

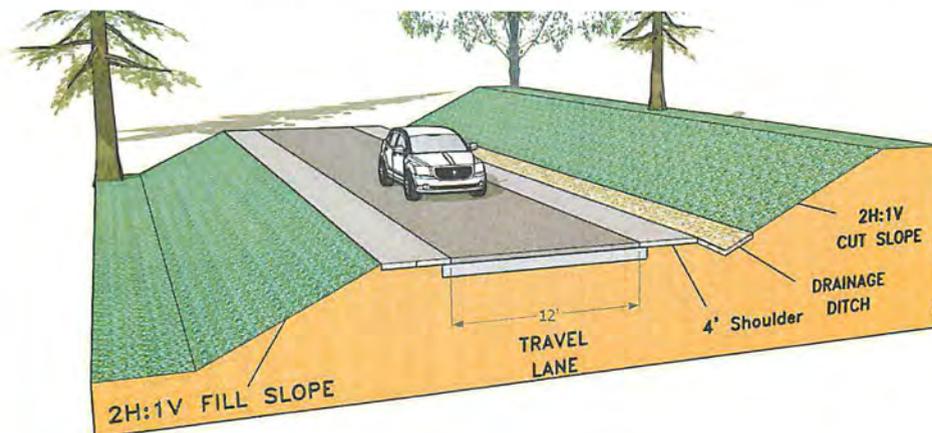


Figure 5
One-way Alley Section

Existing Conditions

Nutwood Avenue and N. 11th Street serve a residential neighborhood with little infrastructure, mature trees, and steep topography. Nutwood Avenue, 11th Street and Pine Avenue are local streets with very low volumes of traffic of less than 1,000 vehicles per day (vpd). At the termination of N. 11th Street is a steep ravine which prohibits the extension of the street. Koos Bay Boulevard is a minor arterial with two lanes of traffic, a four foot sidewalk on the east side, has a posted speed of 30 mph with about 7,000 vpd. The intersection site distance and turning movements at the intersection of Koos Bay Boulevard and Nutwood Avenue are sub-standard. The existing gravel roadways in the neighborhood have an average width of approximately 18 feet.

Surface drainage sheet flows from west to east across the steep topography. N. 11th Street starting at its intersection with Orchard Avenue has a road side ditch that flows north and then is collected in a catch basin. The storm pipe outfall discharges into a steep ravine. Surface water is then collected at the bottom of the ravine into a 12 inch diameter storm line near the unimproved intersection of N. 10th Street and Pine Avenue. This 12 inch diameter storm line flows easterly to a 12 inch diameter storm pipe in the North 8th Street right of way.

Intersection Looking North



Street View

Intersection Looking South

Figure 6
Existing Nutwood Avenue

Basis of Design

The Nutwood Avenue LID design recommendations are based on the AASHTO's *Geometric Design of Highways and Streets* manual, the Oregon Department of Transportation's *Hydraulics Manual*, the City of Coos Bay *Development Provisions for Public and Private Infrastructure Part 2 Design Standards* (June 2009), the *Uniform Fire Code*, ODOT/APWA Oregon Standard Drawings and the City of Coos Bay Transportation System Plan (TSP).

Mapping

Base mapping utilized included assessor tax maps, aerial topography, aerial images, and utility company atlas maps. Design layouts are for planning purposes and will change when more accurate data becomes available.

Roadway Drainage Design.

This section covers design criteria for design of the storm water conveyance system which includes: pipe systems, inlets culverts, outfalls, and opens channels. All public storm drain systems should be designed for storm recurrence intervals as shown in Table 1.

Drainage System Element		Design Storm Recurrence Interval (years)
Small Infill	Five acre or less residential area with previously established public systems and less than 20 cfs.	5
New Small Sties and Mid-Level Development	New street public systems with less than 40 cfs.	10
Major	Major: Laterals (collectors) <250 tributary acres	25
	Trunk >250 tributary acres	50
	Arterial streets and the drainage system in or under arterial streets	50
Watercourses	Without designated floodplain	50
	With designated floodplain	100
Detention Facilities	Storage volume (onsite)	25
	Controlled overflow	100
	Discharge rate	Pre developed flows, 2, 10 and 25
Retention Facilities	Drywell infiltration capacity	25

The rational method or hydrograph method may be used to size facilities with tributary areas less 20 cfs. For sites with 20 cfs and greater, use an approved hydrograph techniques such as the Soil Conservation Service Unit

Hydrograph (SCSUH or SCS TR-55) or Santa Barbara Urban Hydrograph (SBUH) method. Use a level pool routing analysis for detention sizing.

Design storm events utilizing the rational method should apply Zone 3 rainfall intensity curves as shown in the ODOT Drainage Hydraulics Manual. Design Storm Volumes Recurrence Interval 24-Hour Storm Depth (Inches) for hydrograph analysis is taken from the NOAA Isopluvials charts are shown in Table 2.

2-Year	3.5-inch
10-Year	5.0-inch
25-year	5.5-inch
50-Year	6.0-inch
100-Year	6.5-inch

Roadside ditches recommended design standards are:

- Side slopes should not be steeper than 3H:1V for vegetation-lined channels and 2H:1V for rock-lined channels, unless the channel is engineered specifically for steeper slopes.
- Vegetation-lined channels shall have bottom slope gradients of six percent or less and a maximum average velocity at the design flow of 5 fps.
- An established grass, vegetated lining, erosion control matting or other approved erosion control measure (e.g. riprap) is recommended before the channel can be used to convey storm water.
- If the design velocity of a channel to be vegetated by seeding exceeds 2 fps, a temporary channel liner (erosion control matting) is recommended.

A preliminary analysis indicates the 10-year event storm water runoff rate for the Nutwood Avenue basin is approximately 2 cfs. Post construction of the improvements (during a 25-year event) increases the volume of storm water runoff by approximately 1,500 cubic feet. During the final design stage a detailed analysis should be performed to determine the impacts to the downstream drainage system. The findings may conclude a detention facility is warranted at the termination of N. 11th Avenue.

Geometric Layout

Recommended design speeds are as follows:

- Neighborhood routes 25 miles per hour
- Locals 25 miles per hour
- Intersection Turning movement 15 mile per hour

Horizontal curve alignments should meet the minimum radius requirements in Table 3.

Design Speed (mph)	-2.0%	0%	2.0%	4.0%
15	50	50	45	45
20	110	100	95	90
25	200	180	170	160

Reversing horizontal curves should be separated by no less than 50 feet of tangent. On arterials, the separation shall be no less than 100 feet.

Vertical alignments should have a tangent street gradients of not less than one-half (0.5) percent along the crown and curb. The maximum allowable grade based on a hillside design is 16% with written approval of the Coos Bay Fire Chief and the City Engineer. Vertical curves should conform to the values found in Table 4. Sag curves may be reduced in length when street lights are present per the AASHTO comfort design standards.

Design Speed (mph)	Crest Curve	Sag Curve
15	3	10
20	7	17
25	12	26

Intersection sight distance (Clear Zone) for streets and driveways is based on an object height of two feet representing vehicles headlights or tail lights including any object in the public right-of-way, such as landscaping features. The basic intersection is the three-leg (or "T") intersection. Provide a clear sight triangle free from poles, trees and other obstructions. The following minimum standards should apply:

Intersection Sight Distance Design Speed (mph)	Minimum Intersection Sight Distance (feet)
20	80
30	115
40	155
50	200

Koos Bay Boulevard is an arterial street posted with a 30 mph speed limit (35 mph operating speed). Due to vegetation obstruction, the current sight distance at the intersection of Koos Boulevard and Nutwood Avenue (looking north) is 130 feet. The recommended Nutwood Avenue - Koos Bay Boulevard intersection sight distance is 155 feet. Vegetation removal is required to improve the intersection sight distance.

Curb radii at an intersections edge of travel lane should be as shown in Table 6 for the various classifications of streets.

Road Classification	Arterial Road	Collector Road	Local Road
Local Road	25	25	20

Fire truck access roads should be designed in accordance with Appendix D of the *International Fire Code* and is subject to the Coos Bay Fire Chief's approval. The recommended minimum design requirements are:

- Access roads should be paved or other approved driving surfaces capable of supporting a vehicle load of 60,000 pounds.
- The minimum roadway width is 20 feet.
- Pull outs, cul-de-sacs or a hammerhead turn around should be located within 150 feet of a property line unless otherwise approved by the Coos Bay Fire Chief.
- The edge of roadway turning radius (with a 20 ft. roadway width) should not be less than 28 feet.

Hammerhead turn around geometry is applied in the intersection of Orchard Avenue and N. 11th Street. During final design the road geometry will be adjusted to minimize grading impacts.

Cost Estimating

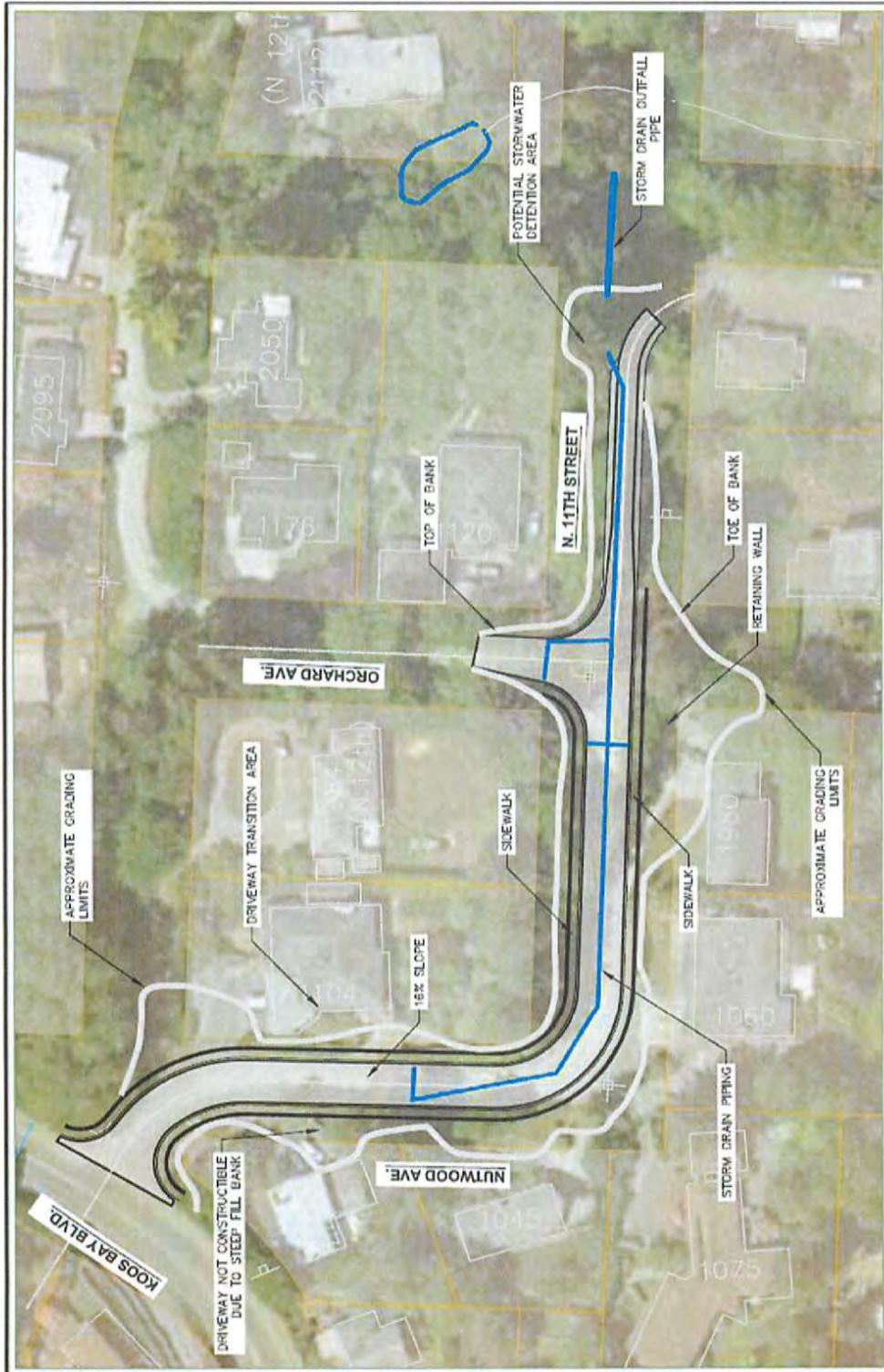
Cost estimates are prepared to provide an economic comparison for each alternative and should include both direct construction costs and indirect construction costs. Direct construction costs are the total amount expected to be paid to a qualified contractor to build the required facilities. Costs are based on actual bidding results from similar work, published cost guides, equipment pricing from vendors and other construction cost experience. As projects proceed and as site-specific information becomes available, the estimates may require updating.

Indirect or non-construction costs are those indirect costs that are not visibly associated with direct construction activities; they are required for the implementation of the project. Non-construction costs are those costs that are typically allocated or spread across all construction activities on a predetermined basis. These costs include design, construction contingencies, environmental review permit support, specialty reports and administration.

A cost contingency is included in indirect expense. Cost estimates presented are based on conceptual design. Consequently, allowances must be made for variations in final quantities, bidding market conditions, adverse construction conditions, changes in the scope of work during construction, unanticipated specialized investigations, designs or studies, and other difficulties which cannot be foreseen at this time, but may tend to increase final costs. Contingency factors may apply to direct and indirect expenses. Predesign contingency factors range between 10% and 20% of the construction cost.

Alternative A

Alternative A is for a standard street width of 28 feet which consist of two ten foot travel lanes, eight feet of parking on one side, curb and gutter, and a five foot wide sidewalk on both sides. This street section complies with the TSP. However Alternative A is not recommended due to the grading restrictions of the project. At the projects entrance, Nutwood Avenues street slope is near 20%. Construction of a street at the maximum 16% slope will raise the street's finished grade and results in several driveways being non buildable. Alternative A is depicted in Figure 7 and a cost estimate is shown in Table 7. The estimated direct construction costs and indirect costs for Alternative A range is between \$639,000 and \$ 703,000 dollars.



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC.		City of Coos Bay NUTWOOD AVENUE FEASIBILITY STUDY		FIGURE NO. 7
DATE: June, 2015		Alternative A - 28' Wide Street with Curb, Gutter and Sidewalk		
PROJECT NO.: 187.15				

Alternative A: Preliminary Cost Estimate				
Description	Quantity	Unit	Unit Cost	Item Cost
Direct Construction Cost:				
Construction Facilities And Temporary Controls	1	LS	\$49,000.00	\$49,000
Flaggers	350	HR	\$50.00	\$17,500
Clearing and Grubbing	1	LS	\$12,000.00	\$12,000
Excavation (in place)	1,500	CY	\$20.00	\$30,000
Embankment (in place)	500	CY	\$22.00	\$11,000
Excavation Export	1,250	TCY	\$10.00	\$12,500
Subgrade Geotextile Fabric	2,300	SY	\$3.00	\$6,900
Gravel Shoulder - 6 inches deep	37	Ton	\$28.00	\$1,036
Aggregate Base - 9 inches deep	1,200	Ton	\$28.00	\$33,600
AC Pavement - 3 inches deep	420	Ton	\$130.00	\$54,600
AC Driveway Transition	2,800	SF	\$9.00	\$25,200
Concrete Curb and Gutter	1,166	LF	\$28.00	\$32,648
Concrete Sidewalks	5,475	SF	\$9.00	\$49,275
Catch Basin or Ditch Inlet	6	Each	\$1,500.00	\$9,000
New Manhole	5	Each	\$3,500.00	\$17,500
Storm Drain Pipe	590	LF	\$50.00	\$29,500
Storm System Detention	1	LS	\$10,000.00	\$10,000
Manhole Adjustment	10	Each	\$1,500.00	\$15,000
Water Meter Relocation	7	Each	\$1,000.00	\$7,000
Water Main and Fire Hydrant Adjustment	1	LS	\$8,000.00	\$8,000
Power Pole Relocation	1	LS	\$2,000.00	\$2,000
Retaining Wall	400	SF	\$65.00	\$26,000
Landscaping and Erosion Control	1	LS	\$15,000.00	\$15,000
			10% Contingency	\$47,000
			Direct Construction Cost Total	\$522,000
Indirect Construction Cost:				
			Agency Administration	\$11,000
			Engineering Design	\$53,000
			Construction Services	\$53,000
			Indirect Construction Cost Total	\$117,000
Total Cost Estimate Range with 10% to 20% Contingency			\$639,000 to	\$703,000

Alternative B

Alternative B is for 28 feet of pavement which consist of two ten foot travel lanes, an eight foot wide parking lane, a two foot gravel shoulder on both sides and a drainage ditch on the uphill side. Alternative B requires significant re-grading and reconstruction of some drives and will require some retaining walls. With a 28 feet wide street section there will be a higher driving comfort level. Alternative B is depicted in Figure 8 and a cost estimate is shown in Table 8. The estimated direct construction costs and indirect costs for Alternative B range is between \$444,000 and \$ 488,000 dollars.



<p>THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC.</p>		<p>City of Coos Bay NUTWOOD AVENUE FEASIBILITY STUDY</p>		<p>FIGURE NO. 8</p>
<p>DATE: June, 2015</p>		<p>Alternative B - 28 Wide Street, No Curb or Sidewalk</p>		
<p>PROJECT NO.: 187.15</p>				

Table 8				
Alternative B: Preliminary Cost Estimate				
Description	Quantity	Unit	Unit Cost	Item Cost
<u>Direct Construction Cost:</u>				
Construction Facilities And Temporary Controls	1	LS	\$39,000.00	\$39,000
Flaggers	300	HR	\$50.00	\$15,000
Clearing and Grubbing	1	LS	\$11,000.00	\$11,000
Excavation (in place)	1,400	CY	\$20.00	\$28,000
Embankment (in place)	250	CY	\$22.00	\$5,500
Excavation Export	1,500	TCY	\$10.00	\$15,000
Subgrade Geotextile Fabric	2,500	SY	\$3.00	\$7,500
Gravel Shoulder - 6 inches deep	130	Ton	\$28.00	\$3,640
Aggregate Base - 9 inches deep	1,200	Ton	\$28.00	\$33,600
AC Pavement - 3 inches deep	463	Ton	\$130.00	\$60,190
AC Driveway Transition	2,800	SF	\$9.00	\$25,200
Catch Basin or Ditch Inlet	6	Each	\$1,500.00	\$9,000
Storm Drain Pipe	150	LF	\$50.00	\$7,500
Storm System Detention	1	LS	\$10,000.00	\$10,000
Manhole Adjustment	10	Each	\$1,500.00	\$15,000
Water Meter Relocation	7	Each	\$1,000.00	\$7,000
Fire Hydrant and Valves Adjustment	1	LS	\$3,000.00	\$3,000
Power Pole Relocation	1	LS	\$2,000.00	\$2,000
Retaining Wall	300	SF	\$65.00	\$19,500
Landscaping and Erosion Control	1	LS	\$12,000.00	\$12,000
			10% Contingency	\$33,000
			Direct Construction Cost Total	\$362,000
<u>Indirect Construction Cost:</u>				
			Agency Administration	\$8,000
			Engineering Design	\$37,000
			Construction Services	\$37,000
			Indirect Construction Cost Total	\$82,000
Total Cost Estimate Range with 10% to 20% Contingency			\$444,000 to	\$488,000

Alternative C

Alternative C is for a rural street section with 20 feet of pavement consisting of two ten foot travel lanes, a two foot gravel shoulder on both sides and a drainage ditch on the uphill side. Parking is not allowed on the street. Alternative B is depicted in Figure 8 and a cost estimate is shown in Table 8. Alternative C is the minimum street width allowed for emergency vehicle access. Alternative C will be the least comfortable to drive due the minimal clearance between oncoming traffic and the top of fill banks. Alternative C has the least impacts caused by grading and is the most cost effective. The estimated direct construction costs and indirect costs for Alternative C range is between \$361,000 and \$ 397,000 dollars.



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC.	City of Coos Bay NUTWOOD LID FEASIBILITY STUDY		FIGURE NO. 9
DATE: June, 2015	Alternative C - 20' Wide Street, No curb or Sidewalk		
PROJECT NO.: 187.15			

Table 9				
Alternative C: Preliminary Cost Estimate				
Description	Quantity	Unit	Unit Cost	Item Cost
Direct Construction Cost:				
Construction Facilities And Temporary Controls	1	LS	\$32,000.00	\$32,000
Flaggers	250	HR	\$50.00	\$12,500
Clearing and Grubbing	1	LS	\$10,000.00	\$10,000
Excavation (in place)	1,400	CY	\$20.00	\$28,000
Embankment (in place)	100	CY	\$22.00	\$2,200
Excavation Export	1,600	TCY	\$10.00	\$16,000
Subgrade Geotextile Fabric	2,000	SY	\$3.00	\$6,000
Gravel Shoulder - 6 inches deep	140	Ton	\$28.00	\$3,920
Aggregate Base - 9 inches deep	900	Ton	\$28.00	\$25,200
AC Pavement - 3 inches deep	357	Ton	\$130.00	\$46,410
AC Driveway Transition	2,800	SF	\$9.00	\$25,200
Catch Basin or Ditch Inlet	2	Each	\$1,200.00	\$2,400
Storm Drain Pipe	150	LF	\$50.00	\$7,500
Storm System Detention	1	LS	\$10,000.00	\$10,000
Manhole Adjustment	10	Each	\$1,500.00	\$15,000
Water Meter Relocation	7	Each	\$500.00	\$3,500
Fire Hydrant and Valves Adjustment	1	LS	\$3,000.00	\$3,000
Power Pole Relocation	1	LS	\$2,000.00	\$2,000
Retaining Wall	100	SF	\$65.00	\$6,500
Landscaping and Erosion Control	1	LS	\$10,000.00	\$10,000
			10% Contingency	\$27,000
			Direct Construction Cost Total	\$295,000
Indirect Construction Cost:				
			Agency Administration	\$6,000
			Engineering Design	\$30,000
			Construction Services	\$30,000
			Indirect Construction Cost Total	\$66,000
Total Cost Estimate Range with 10% to 20% Contingency			\$361,000 to	\$397,000



THE DYER PARTNERSHIP
ENGINEERS & PLANNERS, INC.

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Coos Bay, Oregon 97420
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Fx: (541) 269-2044
www.dyerpart.com

MEMORANDUM

DATE: August 19, 2015
TO: City of Coos Bay
FROM: Tom Hart, P.E.
PROJECT: Nutwood Avenue Local Improvement District
SUBJECT: **Street Improvements Feasibility Report Amendment**

The purpose of this amendment is to review Option D, an added alternative to the Nutwood LID project. The LID neighborhood group expressed a desire to maintain the rural nature of their community, be economically feasible, and provide dust control. The improvements would start at the end of the existing pavement near Coos Bay Boulevard and continue to the Nutwood Avenue intersection with Orchard Avenue.



Figure 1
Vicinity Map

Alternative D

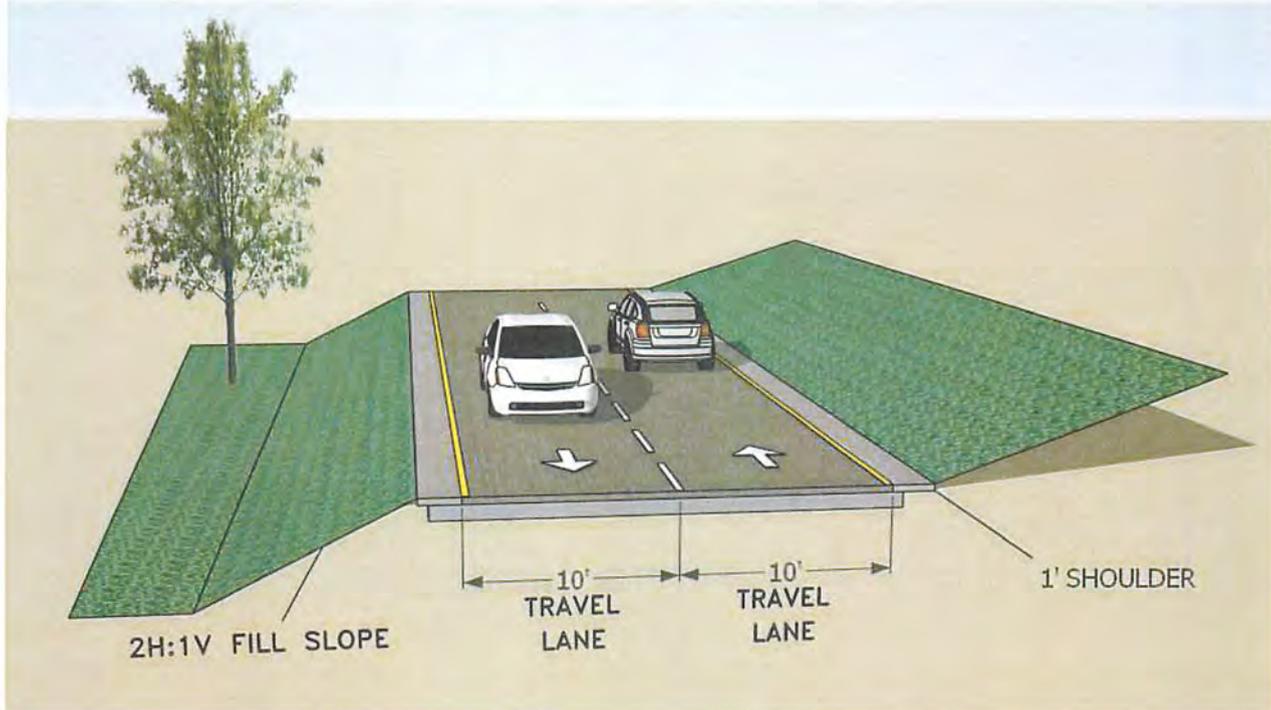


Figure 2
20 Foot Wide Rural Street Section

Alternative D is for a rural street section with 20 feet of pavement consisting of two ten foot travel lanes, and a one foot gravel shoulder on both sides. The street section would be shed (no center line crown) to minimize the concentration storm water surface runoff. Each down slope property owner would be responsible for passing the surface water through their property. This option excludes fire department turn around geometry. During final design the street geometry and grading would be adjusted to minimize impacts to the existing conditions. The estimated direct construction costs and indirect costs for Alternative D range is between \$171,000 and \$188,000.



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC.		FIGURE NO. 3
City of Coos Bay NUTWOOD LID FEASIBILITY STUDY Alternative D - Minimal 20' Wide Street		
DATE: August, 2015 PROJECT NO.: 187.15		

Table 1				
Alternative D: Preliminary Cost Estimate				
Description	Quantity	Unit	Unit Cost	Item Cost
Direct Construction Cost:				
Construction Facilities And Temporary Controls	1	LS	\$12,000.00	\$12,000
Flaggers	250	HR	\$50.00	\$12,500
Clearing and Grubbing	1	LS	\$4,000.00	\$4,000
Excavation (in place)	550	CY	\$20.00	\$11,000
Embankment (in place)	50	CY	\$22.00	\$1,100
Excavation Export	650	TCY	\$10.00	\$6,500
Subgrade Geotextile Fabric	1,100	SY	\$3.00	\$3,300
Gravel Shoulder - 3 inches deep	40	Ton	\$28.00	\$1,120
Aggregate Base - 9 inches deep	600	Ton	\$28.00	\$16,800
AC Pavement - 3 inches deep	240	Ton	\$170.00	\$40,800
AC Driveway Transition	1	LS	\$5,000.00	\$5,000
Catch Basin or Ditch Inlet	1	Each	\$1,200.00	\$1,200
Storm Drain Pipe	10	LF	\$50.00	\$500
Manhole Adjustment	3	Each	\$1,500.00	\$4,500
Fire Hydrant and Valves Adjustment	1	LS	\$1,000.00	\$1,000
Landscaping and Erosion Control	1	LS	\$5,000.00	\$5,000
			10% Contingency	\$13,000
			Direct Construction Cost Total	\$140,000
Indirect Construction Cost:				
			Agency Administration	\$3,000
			Engineering Design	\$14,000
			Construction Services	\$14,000
			Indirect Construction Cost Total	\$31,000
Total Cost Estimate Range with 10% to 20% Contingency			\$171,000 to	\$188,000

A proposal for the method of assessment, whether according to the front foot method, or square foot method, or a combination there of, in proportion to the benefits derived to the lots and lands specially benefited. You pay an amount proportional to the benefits you receive for each property you own. Benefits include added value to your property and improvements to your neighborhood.

The recommended method of assessment for the Nutwood LID to determine the apportionment of the whole cost of the improvement to the individual property (or lot) benefitted is based on two components. One component is the ratio of the area of the individual lot to the area of the entire Local Improvement District. The other component is based on the length of the new street used by the individual property (lot) divided by the sum of each length of the new street used by each individual lot. Each component is multiplied by the total cost of the project then multiplied by one half. The value of each component is then added together to give the apportionment.

The formula for determining the cost share for each individual lot within the LID

$$\mathbf{CS = (A \times PC) \times 0.5 + (L/\Sigma L \times PC) \times 0.5}$$

CS = Cost share (or cost apportionment) for an individual lot

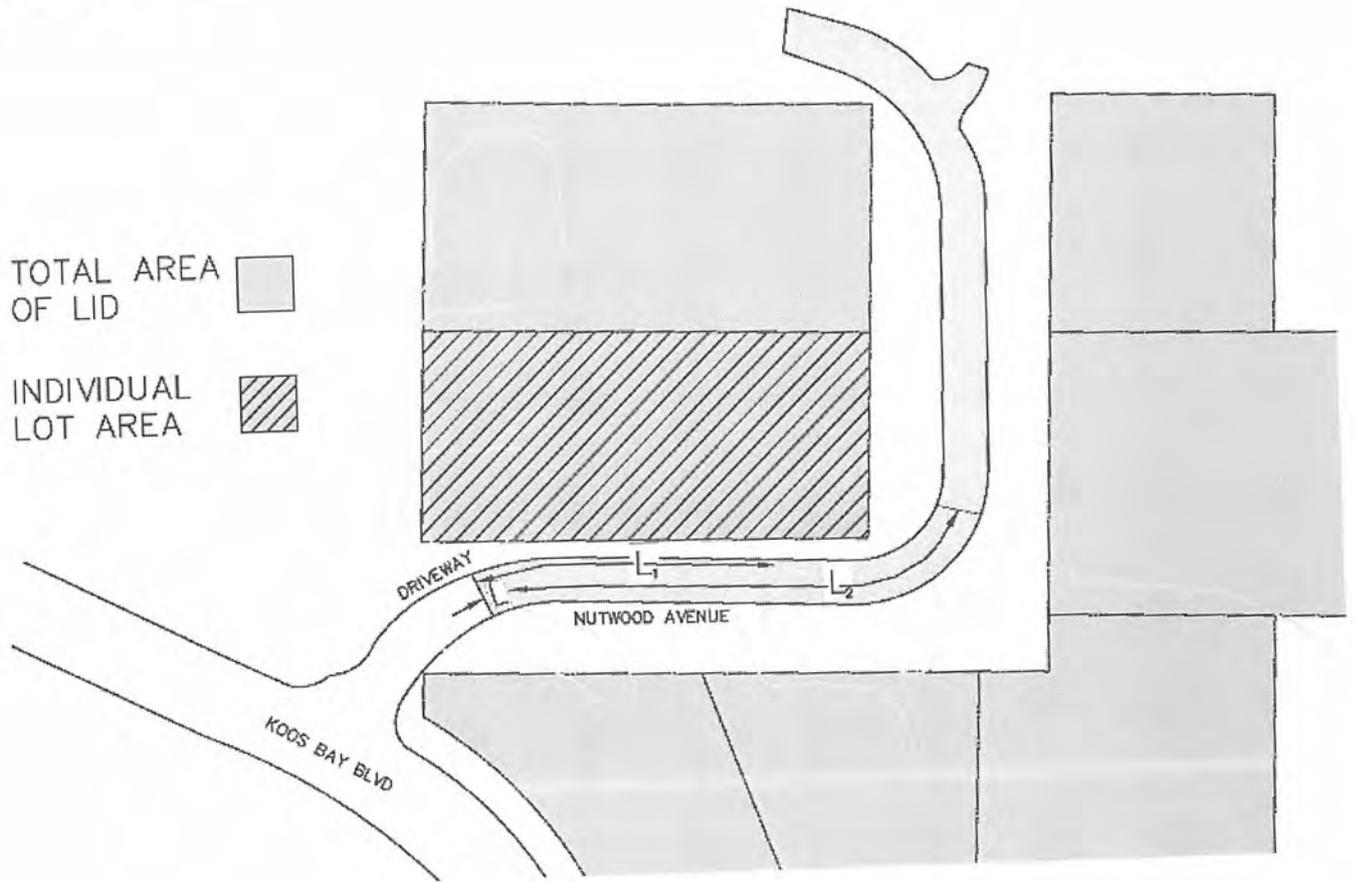
A = Ratio of individual lot area to total area of the LID

PC= Project Cost (include engineering, clerical, surveying, inspection of work, etc.)

L=Length of new road servicing the individual lot in linear feet

ΣL =Sum of lineal feet of new road servicing each lot in the district (L + L₁ + L₂ +)

For Example:



Cost to Originally Supportive Lot Owners Benefiting from the Proposed LID

TL#	Address #	Street Name	LID Area	% of Total	Y=1 N=0	Revised LID Area	% of revised total area	Cost Share 1/2 land + 1/2 street length	Linear Feet of Road
301	2112	12th	20022	6.1%	0	0	0.0%	\$0	0
400	1120	Orchard	21093	6.4%	1	21093	11.0%	\$28,212	495
500	2050	12th	9977	3.0%	0	0	0.0%	\$0	0
600	1176	Orchard	9003	2.7%	0	0	0.0%	\$0	0
700	1984	Orchard	20781	6.3%	1	20781	10.8%	\$10,183	0
800	1104	Nutwood	18918	5.8%	1	18918	9.9%	\$10,354	30
900	N/A	12th	28761	8.7%	0	0	0.0%	\$0	0
1400	2030	13th Ct	12977	3.9%	0	0	0.0%	\$0	0
1500	2095	12th	6607	2.0%	0	0	0.0%	\$0	0
1700	2099	12th	14241	4.3%	0	0	0.0%	\$0	0
2400	2076	11th	19125	5.8%	1	19125	10.0%	\$24,358	415
2500	2037	10th Ct	20986	6.4%	1	20986	10.9%	\$22,092	327
3400	N/A	Orchard	10824	3.3%	1	10824	5.6%	\$17,113	327
3500	1960	11th	10900	3.3%	1	10900	5.7%	\$17,150	327
3600	1060	Nutwood	25841	7.9%	1	25841	13.5%	\$22,305	267
3700	1075	11th	33431	10.2%	1	33431	17.4%	\$24,146	215
3701	1055	11th	25053	7.6%	0	0	0.0%	\$0	0
8600	1185	Nutwood	10395	3.2%	0	0	0.0%	\$0	0
8700	1045	Nutwood	9927	3.0%	1	9927	5.2%	\$12,087	200
			328862	100.0%		191826	100.0%	\$188,000	2603
								Assume	\$188,000

Highlighted lots are those properties where owners originally supported LID

Cost per linear foot of road is \$36.11; Cost per square foot of lot is \$0.49

Individual Lot Owner's Cost if All Benefiting Lots Paid Proportional Share of the Proposed LID

TL#	Address #	Street Name	LID Area	% of Total	Y=1 N=0	Revised LID Area	% of revised total area	Cost Share 1/2 land + 1/2 street length	Linear Feet of Road
	301	2112 12th	20022	6.1%	1	20022	6.1%	\$13,129	495
	400	1120 Orchard	21093	6.4%	1	21093	6.4%	\$13,435	495
	500	2050 12th	9977	3.0%	1	9977	3.0%	\$10,257	495
	600	1176 Orchard	9003	2.7%	1	9003	2.7%	\$9,979	495
	700	1984 Orchard	20781	6.3%	1	20781	6.3%	\$5,940	0
	800	1104 Nutwood	18918	5.8%	1	18918	5.8%	\$5,856	30
	900	N/A 12th	28761	8.7%	1	28761	8.7%	\$15,627	495
	1400	2030 13th Ct	12977	3.9%	1	12977	3.9%	\$11,115	495
	1500	2095 12th	6607	2.0%	1	6607	2.0%	\$9,294	495
	1700	2099 12th	14241	4.3%	1	14241	4.3%	\$11,476	495
	2400	2076 11th	19125	5.8%	1	19125	5.8%	\$11,675	415
	2500	2037 10th Ct	20986	6.4%	1	20986	6.4%	\$10,891	327
	3400	N/A Orchard	10824	3.3%	1	10824	3.3%	\$7,986	327
	3500	1960 11th	10900	3.3%	1	10900	3.3%	\$8,008	327
	3600	1060 Nutwood	25841	7.9%	1	25841	7.9%	\$11,381	267
	3700	1075 11th	33431	10.2%	1	33431	10.2%	\$12,772	215
	3701	1055 11th	25053	7.6%	1	25053	7.6%	\$10,378	215
	8600	1185 Nutwood	10395	3.2%	1	10395	3.2%	\$2,971	0
	8700	1045 Nutwood	9927	3.0%	1	9927	3.0%	\$5,830	200
			328862	100.0%		328862	100.0%	\$188,000	6283
								Assume \$188,000	

Highlighted lots are those properties where owners originally supported LID

Cost per linear foot of road is \$14.96; Cost per square foot of lot is \$0.29

TL#	Address #	Street Name	Owner	Assessed Value
301	2112	12th	STEPHENS, MARK J. & MADELINE E.	\$256,740
400	1120	Orchard	FIELDS, ROBERT D. & MARY J.	\$198,020
500	2050	12th	BRYAN, BRIAN; ETAL	\$106,310
600	1176	Orchard	SAYLOR, ROBERT E. & ELIZABETH M.	\$165,530
700	1984	Orchard	GOULD, ADAM Q.	\$298,190
800	1104	Nutwood	PITTINGER, BASIL & TERRY	\$356,710
900	N/A	12th	FULLERTON, STANLEY J. & GAIL J.	\$91,920
1400	2030	13th Ct	FULLERTON, STANLEY J. & GAIL J.	\$307,850
1500	2095	12th	HUDSON, LARRY R.	\$113,540
1700	2099	12th	HUNTLEY, DOUGLAS S.; ET AL	\$156,710
2400	2076	11th	HOLMAN, BLAIR A. & TABOR, VIRGINIA I.	\$436,360
2500	2037	10th Ct	WALTON, JOHN P. & M.	\$223,220
3400	N/A	Orchard	WALTON, PAUL G. & BROOKE D.	\$40,510
3500	1960	11th	ROJAS, LISA D. & GUILLERMO M.	\$212,140
3600	1060	Nutwood	MAIN, CRAIG & SHARA	\$236,510
3700	1075	11th	JOAN A. GLASGOW REVOCABLE TRUST	\$369,110
3701	1055	11th	PRINZ, GREGORY J.	\$204,190
8600	1185	Nutwood	KELLER, DAVID J.	\$160,650
8700	1045	Nutwood	JANE L. BRIGGS TRUST	\$222,740