

# SULTAN CITY COUNCIL

## AGENDA ITEM COVER SHEET

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**ITEM NO:** A - 2

**DATE:** March 25, 2010

**SUBJECT:** Aid Agreement with Snohomish County  
Resurface Eighth Street

**CONTACT PERSON:** Connie Dunn, Public Works Director 

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### **ISSUE:**

The issue before the City Council is to approve the budgeted expenditure to resurface 8<sup>th</sup> Street. The City of Sultan (city) and Snohomish County (county) have an Interlocal Aid Agreement in Place that allows this work to be completed while the county is working in East County on their resurfacing projects.

### **STAFF RECOMMENDATION:**

Authorize staff to proceed with submitting an aid work order for Snohomish County Road Maintenance to resurface Eighth Street for the amount of \$33,710, plus tax and administration costs. (Attachment A)

### **SUMMARY:**

The 2010 budget for the Street Improvement Fund allocated \$30,000. This \$30,000 is less than the county quote of \$33,710. The city public works crew will do the prep work at the 5 locations where the pavement is failing and sweep the gravel afterwards to bring the cost within budget.

Resurfacing an asphalt surface with a layer of emulsifier and 3/8 inch-sized gravel over the surface adds 10-15 years of wearable surface to the road/street. Eighth Street was constructed in 1987 and is reaching the end of good surface life, chip seal will extend with the life of 8<sup>th</sup> Street.

The county will be doing resurfacing of roads in the county and possibly for Washington State Department of Transportation (WSDOT) this summer. The county would do this project while in the area.

### **BACKGROUND:**

Speaking with Mel Ritz, Snohomish County, the city has a current ILA for road maintenance signed in 2002. For several years, the city has worked with the county road maintenance division through the 'aid agreement work order' (attachment B) for center line and fog line stripping on major roads throughout the city, dust coat (dust control) on gravel streets within the city, resurfacing Rice Road, and snow plowing during inclement weather.

Later this year the city staff would like to ask county road maintenance to place thermoplastic cross walk markings on Main Street, 8<sup>th</sup> Street and streets around the schools. This would allow volunteers to complete other projects in the city instead of painting crosswalks, thermoplastic would also save the city funds to be used else where in years to come.

**FISCAL IMPACT:**

The cost is \$33,800 to link with Snohomish County to resurface 8<sup>th</sup> Street, that Sultan does not have the equipment to accomplish, while they are working in East County. There is \$30,000 in the 2010 budget for street resurfacing, fund Capital Fund 303 Street Improvement. The fund source for the 303 fund is utility excise tax, the first two months of 2010 the city has collected \$20,432, B & O Electric Tax varies on a month to month basis dependant on weather. There will sufficient funds to cover project costs by July 2010.

**RECOMMENDED ACTION:**

Participate with the county on resurfacing 8<sup>th</sup> Street in Sultan using the Interlocal Agreement with Snohomish County, the county has resurfacing projects scheduled for 2010, contingent on available funds which is utility tax that comes to the city on a monthly basis.

**ATTACHMENTS:**

- A Snohomish County Chip Seal Bids
- B Snohomish County Public Works Department Road Maintenance Division – Aid Agreement  
Work Order
- C Chip Seal News and Views, February 2010

Project: Chip-Seal  
 Location: 8th St (Main St to High St)  
 Project Number:  
 Project Limits: 2400'x25'

Date 3/2/2010

**Labor**

Class	No	Rate	Hours	Amount
Lead	1	31.23	5	\$ 156.15
6/5	1	28.94	5	\$ 144.70
5/5	3	27.57	5	\$ 413.55
4/5	1	26.21	5	\$ 131.05
3/5	10	24.92	5	\$ 1,246.00
2/5	1	23.66	5	\$ 118.30
1/5	10	22.28	5	\$ 1,113.00
				<b>Total</b> \$ 3,322.75
				Fringe Benefits \$ 1,761.06
				Admin Fee \$ 498.41
				<b>Subtotal</b> \$ 5,582.22

**Equipment**

	No	Rate	Hours	Amount
Loader	1	58.71	5	\$ 293.55
Tractor	1	35.82	5	\$ 179.10
Heated Trailer	1	21.09	5	\$ 105.45
Distributor	1	38.48	5	\$ 192.30
Chip Spreader	1	102.71	5	\$ 513.55
Dbl Axle Trk	7	22.80	5	\$ 798.00
Eqmat Trailer	4	10.23	0	\$ -
Rubber Tire Roller	2	26.59	5	\$ 245.90
10 Ton Roller	1	11.89	5	\$ 58.45
Med. Crewcab(Soud)	1	10.21	5	\$ 51.05
1-Ton Flatbed	1	11.32	5	\$ 56.60
1 Ton Crewcab	1	12.68	5	\$ 63.40
3/4 Ton Pick-up	2	6.48	5	\$ 64.60
Broom	1	35.77	5	\$ 178.85
				<b>Subtotal</b> \$ 2,890.80

**Material**

	Quantity	Rate	Amount
3/8 Chipped Rock	74	11.95	\$ 884.30
CRS 2P(3333 gal @ .50/yard2 shot rate)	14	550.00	\$ 7,700.00
			<b>Subtotal</b> \$ 8,584.30

**Total Cost \$ 16,967.32**

Project: Fog-Seal  
 Location: 8th St (Main St to High St)  
 Project Number:  
 Project Limits: 2400'x25'

Date 3/2/2010

**Labor**

Class	No	Rate	Hours	Amount
Lead	1	31.23	2	\$ 62.46
4/5	1	28.21	2	\$ 52.42
1/5	4	22.26	2	\$ 178.08
Total				\$ 292.96
Fringe Benefits				\$ 155.27
Admin Fee				\$ 43.94
Subtotal				\$ 492.17

**Equipment**

	No	Rate	Hours	Amount
Single Axle Distributor	1	38.46	2	\$ 78.92
1 Ton Crewcab	1	12.68	2	\$ 25.36
Total				\$ 102.28

**Material**

	Quantity	Rate	Amount
CSS 1H (667 gal @ .10 gal per yrd/2)	2.0	550.00	\$ 1,595.00
Total			\$ 1,595.00

**Total Cost \$ 3,886.73**

Project: City of Sultan  
 Location: 8th St(Main to High)  
 Project Number:  
 Project Limits: 5 spots between Main St and High St

Date 3/3/2010

**Labor**

Class	No	Rate	Hours	Amount
Lead	1	31.23	8	249.84
5/5	1	27.57	8	220.56
4/5	7	26.21	8	1,467.76
3/5	1	24.92	8	199.36
2/5	2	23.96	8	378.56
1/5	4	22.26	8	712.32

Total	3,228.40
Fringe Benefits	1,711.05
Admin Fee	454.26
<b>Subtotal</b>	<b>4,939.45</b>

**Equipment**

	No	Rate	Hours	Amount
Paver	1	51.95	8	415.60
Dbt Axle Trk	4	22.80	8	729.60
Pup Trailer	0	13.90	0	0.00
Eqmnt Trailer	3	10.23	8	245.52
10 Ton Roller	1	11.69	8	93.52
3 Ton Roller	1	13.18	8	105.44
Tack Truck	1	38.46	8	307.68
Water Truck	1	10.21	8	81.68
Med. Crewcab	1	10.21	8	81.68
1-Ton Flatbed	0	11.32	8	0.00
1 Ton Crewcab	1	11.32	8	90.56
3/4 Ton Pick-up	1	6.46	8	51.68
Hot Pot	0	6.02	0	0.00

Subtotal 2,202.96

**Material**

	Amount	Rate	Total
Asphalt	115	45.00	5,175.00
CSS-1	6.25	425.00	106.25

Subtotal 5,281.25  
 Tax 433.66  
 Subtotal 5,714.31

**Total Cost 12,656.72**

Project: Chip-Seal Sweeping  
Location: 8th St (Main St to High St)  
Project Number:  
Project Limits: 2400'x25'

Date 3/3/2010

**Labor**

Class	No	Rate	Hours	Amount
3/5	2	24.92	5	\$ 249.20
			Fringe Benefits	\$ 132.08
			Admin Fee	\$ 37.38
			<b>Subtotal</b>	<b>\$ 418.66</b>

**Equipment**

	No	Rate	Hours	Amount
Street Sweeper	1	72.41	5	\$ 362.05
Dbf Axle Truck	1	22.80	5	\$ 114.00
			<b>Total</b>	<b>\$ 476.05</b>

**Total Cost**      \$ 894.71

**ATTACHMENT A-4**



**ROAD MAINTENANCE AID AGREEMENT WORK ORDER**

**Agency/Jurisdiction:** \_\_\_\_\_

**Submitted By:** \_\_\_\_\_ **Date Submitted:** \_\_\_\_\_

**Authorized By:** \_\_\_\_\_ **Position/Title:** \_\_\_\_\_  
 (Agency/Jurisdiction Approval to Proceed per Estimated Cost Below)

**Contact Info:** \_\_\_\_\_

**Requested Completion Date:** \_\_\_\_\_

**WORK TO BE PERFORMED** (Description and/or Sketch) (Attach Additional Pages If Needed)

Once completed please email to: [Contact.PWRoad@snoco.org](mailto:Contact.PWRoad@snoco.org)

County's Estimated Cost For Services: \_\_\_\_\_

County Reimbursable Service Number: RR

Approved By:

RM Operations Manager: \_\_\_\_\_ Date: \_\_\_\_\_

RM Director: \_\_\_\_\_ Date: \_\_\_\_\_

Date of Completion: \_\_\_\_\_ By: \_\_\_\_\_

# Chip Seal News & Views

by Tom Doolittle, Doolittle Construction  
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[www.chipseals.com](http://www.chipseals.com)  
Issue 3, February 2010

## Chip Seal Preserves our Resources

One environmental trend that should receive more attention is saving our natural resources by reducing consumption of road preservation materials. Increasing the use of bituminous surface treatment (BST or chip seal) to preserve asphalt pavement, instead of using hot mix asphalt (HMA) overlays exclusively would make a big impact. The world's supply of asphalt is dwindling, as the asphalt shortages of 2008 reminded us. Additionally, new sources of aggregate supply have been stalled for years by neighborhood opposition, bureaucratic processes and Federal rulings. It is only a matter of time until availability of both products goes down and prices go up.

WSDOT has recently changed its internal recommendations for pavement resurfacing methods. The focus of this change was to save money, but the point of this article is the savings of our natural resources that will occur because of this change. The new guidelines now allow BST chip seal on roads up to 5,000 average daily traffic (ADT), up from 2,000 ADT. This potentially adds 2,356 lane miles, at 20' wide, of roadway to the WSDOT chip seal program.

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BY: \_\_\_\_\_

The study that, in part, motivated this change recommended alternating a combination of chip seal (or multiple cycles of chip seal) and HMA overlays on these roadways. The HMA would be used only when the surface becomes too rutted or rough, or when other circumstances dictated its use.

Let us assume for discussion purposes that this change will be implemented on the roads between 2,000 and 5,000 ADT, using a ratio of two chip seals to one HMA overlay. WSDOT typically repaves every 12 years (with a 45mm overlay), or chip seals every 8 years. (My personal opinion is that 8 years is too long between chip seals, a 6 year cycle was used for this comparison). This change adds the equivalent of 1,178 lane miles or 13,800,000 square yards to their program that will be chip sealed twice over 12 years, instead of using one HMA overlay. This change to use less HMA and more chip seal would save 34,000 tons of liquid asphalt base (the equivalent of 1.4 million barrels of oil) and 860,000 tons of aggregate over a 12 year period, a 45% reduction of liquid asphalt base, and a 65% reduction in aggregate.

There are many factors that dictate where HMA may be needed, or how long the chip seal cycle should be; but if the potential savings from one government agency could be this big, think what the reduced consumption of our natural resources could be if other agencies began to think in these terms.

Reference: "Bituminous Surface Treatment Protocol" by Professor Joe P. Mahoney (U of W), prepared for the WSDOT, April 2007



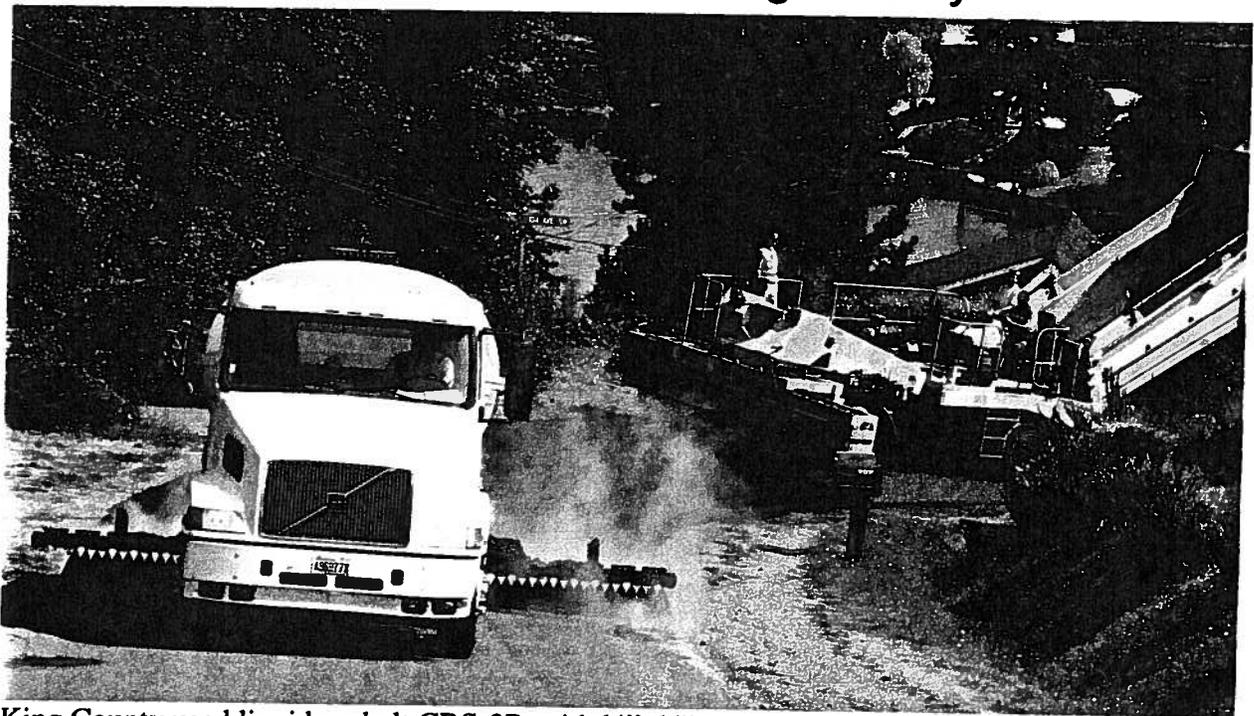
## Prequalification of Contractors Assures Quality Results

The current recession has contractors bidding work with no profit, looking to other states for options, and scrambling to find other types of work that may be less competitive. It is only natural that some of them are looking at chip seal to expand their operations. Experienced, quality contractors competing for your business is good for your agency and healthy for the industry. However, inexperienced contractors will also be looking at chip seal as an option for work.

Prequalification of contractors capable of doing your work is advisable, using a process similar to the Washington State Standard Specification #1-02.1. The questionnaire used by the State inquires about the contractor's qualifications, experience, and equipment. At a minimum, the bid documents should include a requirement that the contractor have completed three similar projects in the last three years, with good results.

If your agency is considering a chip seal using hot rubberized asphalt with black pre-coated chips, the prequalification process should be specific to this type of asphalt.

## Vashon Island Chip Seal for King County



King County used liquid asphalt CRS-2P, with 1/2"-1/4" aggregate on the entire project. CSS-1h fog seal (60% CSS-1H, diluted with 40% water) was applied afterwards to the arterials.

# UPDATE: Proven Value from Double Chip Seal

(Third in a series of articles tracking the quality of these projects)

Double chip seal may be the most cost effective way to deal with asphalt pavement that has deteriorated too far to be saved by a single chip seal. It will hold up better than a thin overlay because it bonds better to the old pavement, it seals better, and is more flexible than an overlay. To substantiate this, we continue to monitor the condition of past projects.

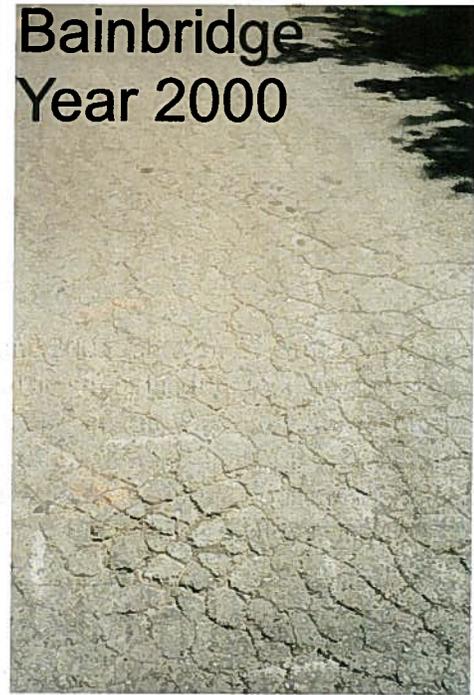


June 2005 (above), 3<sup>rd</sup> Street, in Port Angeles; high traffic street leading to a grocery store and gas station. The pavement was "alligatored" throughout the entire block. Liquid asphalt CRS-2P applied in 2005, with 1/2"-1/4" rock on the bottom lift, 3/8"-#10 for the top, then a CSS-1h fog seal was applied.



October 2009 (above), same location on 3<sup>rd</sup> Street, off US 101, in Port Angeles. No sign of any pavement deterioration.

**Bainbridge  
Year 2000**



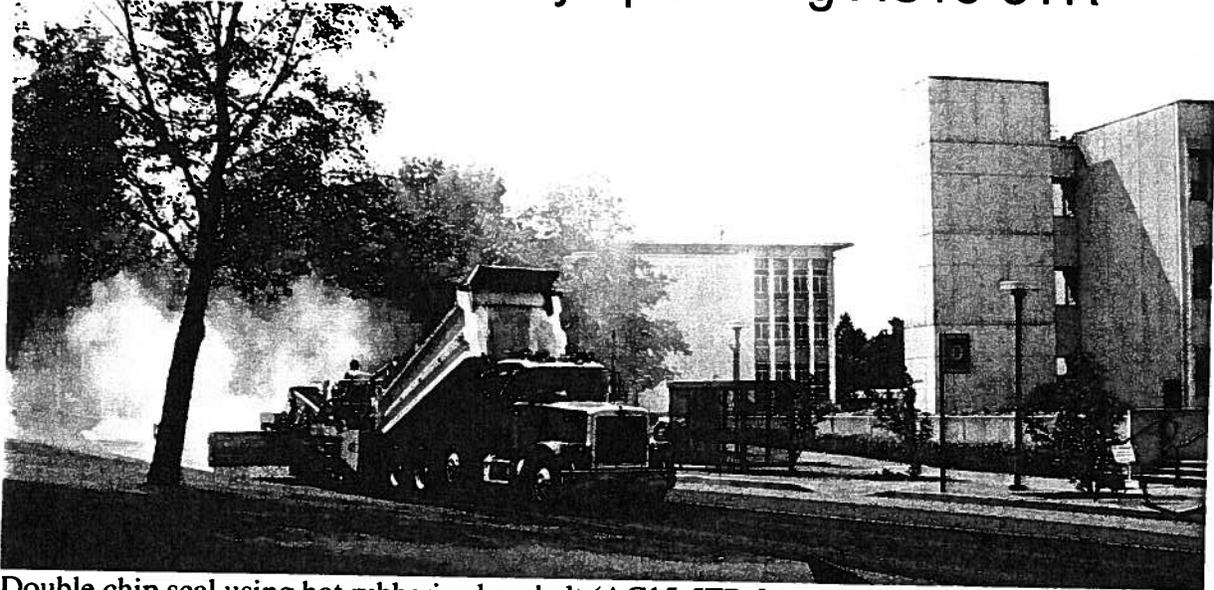
June 2000, Bainbridge Island, looking south on Arrowpoint Drive NE, from the intersection of Frey Road NE; a severely alligatored neighborhood collector street.

**Bainbridge Island  
Ten Years Later**



February 2010, same location on Arrowpoint Drive, 10 years after a double chip seal using Albina Asphalt's RS-LTP. 1/2"-1/4" crushed rock was used on the bottom lift, and 3/8"-# 10 on the top lift. One hairline crack has started. All other looks very good.

## Double Chip Seal in Olympia using AC15-5TR



Double chip seal using hot rubberized asphalt (AC15-5TR from Wright Asphalt) with black pre-coated chips in front of the WSDOT headquarters in Olympia in 2007. 1/2" – 1/4" rock was used on the first lift, then 3/8" - #10 on the second. The crushed screenings were pre-coated with paving grade asphalt first in a hot mix plant. Chip sealing with this material is about 25% more expensive than the typical CRS-2P chip seal.

## Puyallup 2009



A double chip seal, using CRS-2P, was applied to several blocks through downtown Puyallup on Meridian Street. 1/2"–1/4" rock was used on the first lift, 3/8"–#10 rock for the top lift, then a CSS-1h fog seal was applied afterwards. The street was kept open at all times.

## Chip Seal Patching

The ideal time to chip seal is before a road starts to deteriorate. The cost in the long run will be less and the road will be in better condition.

However, if the road has deteriorated too far for a single chip seal, a chip seal patch may be the answer. This will add body and texture to the road, bridging over alligator type cracking.

Chip seal patches could be done the same day as the chip seal, if done on a small scale, but the best result could be achieved by allowing the patches to cure out overnight.

Using this instead of hot mix asphalt patches eliminates many of the problems of HMA patching, such as:

- Higher cost
- Longer cure time; ideally, HMA should cure for several weeks, before chip seal
- HMA requires a fog seal, after the patch cures, before the chip seal.



## Prices are up slightly from last year

Higher prices for liquid asphalt are here to stay; one of the primary reasons is the change in the oil refining process. Most of the oil refineries have been installing new equipment which is able to refine more of a barrel of oil into the profitable fuels, such as gasoline and diesel. It used to be that 30% to 40% of every barrel of oil was left over to make asphalt, but now if the new refining process is used, there may be as little as 2% left over for asphalt.

The forecast for the summer of 2010 is for asphalt to be 5% to 15% higher than last year. Liquid asphalt is only a portion of the total price; trucking and fuel prices are steady, labor and gravel are up about 5%.

## Fog Seal

The use of a fog seal (defined as 60% CSS-1H, diluted with 40% water, and applied at 0.12 to 0.15 gallons per square yard) on top of a chip seal has become the industry standard. The benefits are numerous.

- A fog seal puts more asphalt between the "chips", to hold the rock better, eliminating any further shedding of rock.
- The black color gives better contrast for striping.
- It takes away some of the coarseness, slightly smoothing the surface.
- Good insurance to protect a new chip seal.



## Edward Doolittle 1920 - 2009

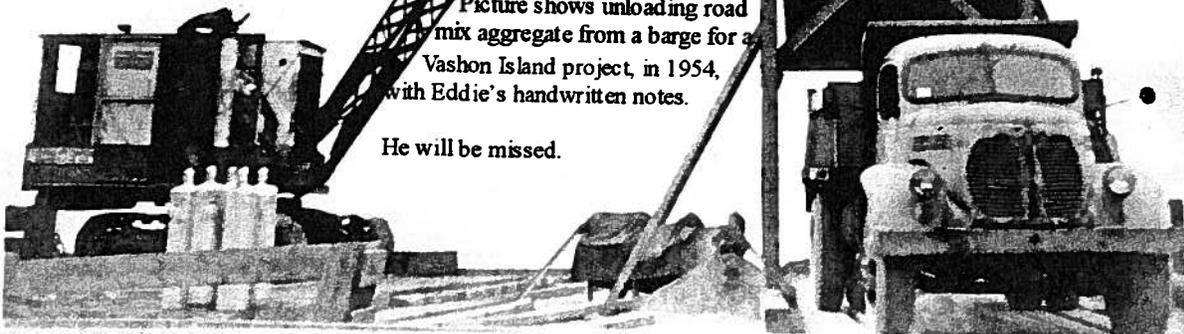
Eddie Doolittle was one of Washington State's road building pioneers. He was the product of a road building family, spending part of his childhood camping on-site at various road jobs. He graduated from the University of Washington in June of 1941 with a civil engineering degree. Eddie and his father, Edward Sr., started Doolittle Construction Co. in 1944. Their first job was the 1<sup>st</sup> Ave. South Bridge over the Duwamish. It was a temporary steel truss swing bridge with a wood deck, for two lanes of detoured traffic, to be used while the new 1<sup>st</sup> Avenue S. Bridge was built. They only built 2 or 3 other bridges, before moving on to other types of construction.

In 1947 they got their first asphalt surface treatment project. It was less competitive than bridge building, because of the difficulty in getting the materials to the far-flung locations. Some of these projects were road mixing liquid asphalt & gravel, and some were a double bituminous surface treatment (DBST) on the prepared gravel subgrade. Single layer BST, chip seal, became widespread to seal and preserve roads.

In the Company's first 30 years, they worked all over the State, including several major BST projects in Eastern Washington. Besides the BST, they did a wide variety of projects, including working on airports, military reservations, roads and street construction. Marymoor Park development was a favorite.

Picture shows unloading road mix aggregate from a barge for a Vashon Island project, in 1954, with Eddie's handwritten notes.

He will be missed.



*Homemade 14" x 12" Hopper.*

*X Barge's decked 500' spike bent ramp*

*Petroleum pier, Vashon 1954* *Tramp ATTACHMENT C-6*

*McDowell's concrete & aggregate*