

BAKER CITY DEPARTMENT OF PUBLIC WORKS



2013 PAVEMENT MANAGEMENT PLAN

Maintenance and Rehabilitation Planning

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THINK OF A PAVEMENT MANAGEMENT PLAN AS...

A portfolio of information to assist decision makers in their management of a public asset – city streets.

By effectively planning for the routine preventative care of city streets, costs associated with such maintenance can be minimized.

INTRODUCTION

February 15, 2013

Baker City Public Works Advisory Committee (PWAC)
Subject: 2013 Pavement Management Plan

It's that time of year again. It's time to talk pavement maintenance. Some of you are new to the Committee and some of you are seasoned veterans, but regardless of your tenure with this group you have heard the same story...our roads are deteriorating faster than we can afford to fix them. However, Baker City is in slightly better condition than the majority of communities across the country.

The Pavement Maintenance Program put into place approximately 25 years ago has helped to slow the deterioration of our streets and the staff is constantly looking for ways to do more with the dollars we have available. I'll call your attention to the graphs on the following pages. These graphs show the ever increasing costs specifically as they relate to pavement improvement options. Despite the grim information, Baker City Public Works is committed to implementing a comprehensive Pavement Maintenance program in 2013.

As a review, in 2012 Baker City Public Works crews completed a Chip Seal of over 64 blocks (3.76 miles) in a five (5) day period. A few blocks were double chipped and we are studying the results to evaluate the benefit of adding more rock and oil to the street surface compared to the increased cost. We have reviewed our oil and rock selections and improved the chip seal operation each and every year. Also in 2012 the PWAC supported the plan to set aside over \$114,000 to use in a future overlay project.

Well, the future is here, and this year staff is proposing a significant overlay project and a moderate chip seal project. The overlay project proposed is the completion of the 'E' Street project initiated in 2011. Setting aside money last year and adding dollars this year allows for a larger project with the anticipation of a lower overall cost per square yard of asphalt applied. This year's overlay will cover 8th to College. In addition, the project includes storm water work to accommodate drainage, and construction of sidewalk along the north side of the street adjacent to Baker High School. A smaller chip seal project is proposed this year to allow funds to be applied to the larger overlay project and, in cooperation with our oil supplier, we plan to complete a small experimental fog seal project as well. It is important to explore and utilize many types of preventative maintenance to appropriately improve the longevity of our transportation system.

If you have any questions as you review the 2013 Pavement Management Plan, please don't hesitate to contact me or any one of the Public Works Department staff members. We are all committed to providing the PWAC and the public with the information you need. Thank you for volunteering your time to serve your community.

Sincerely,

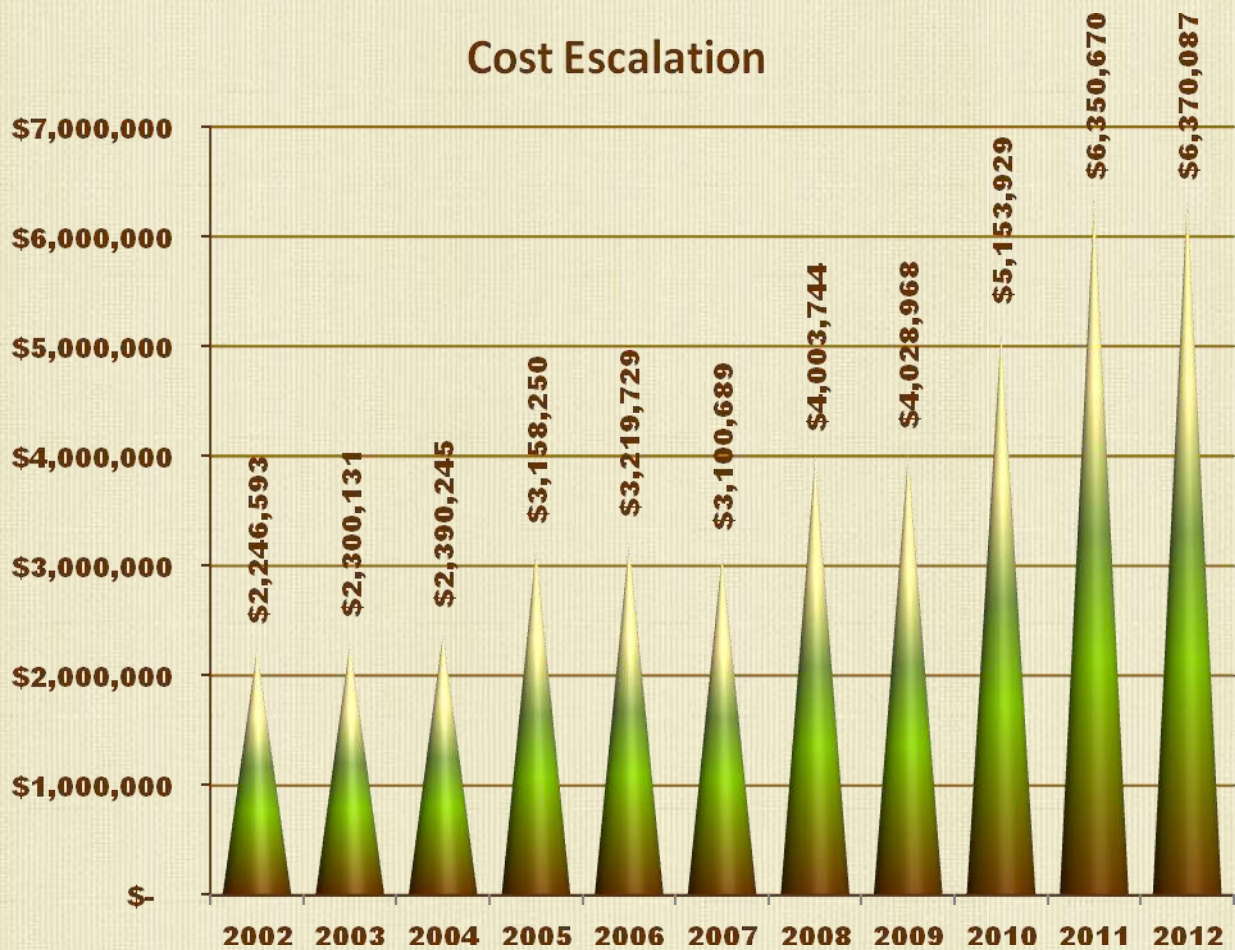
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**2013 PAVEMENT
MANAGEMENT PLAN**

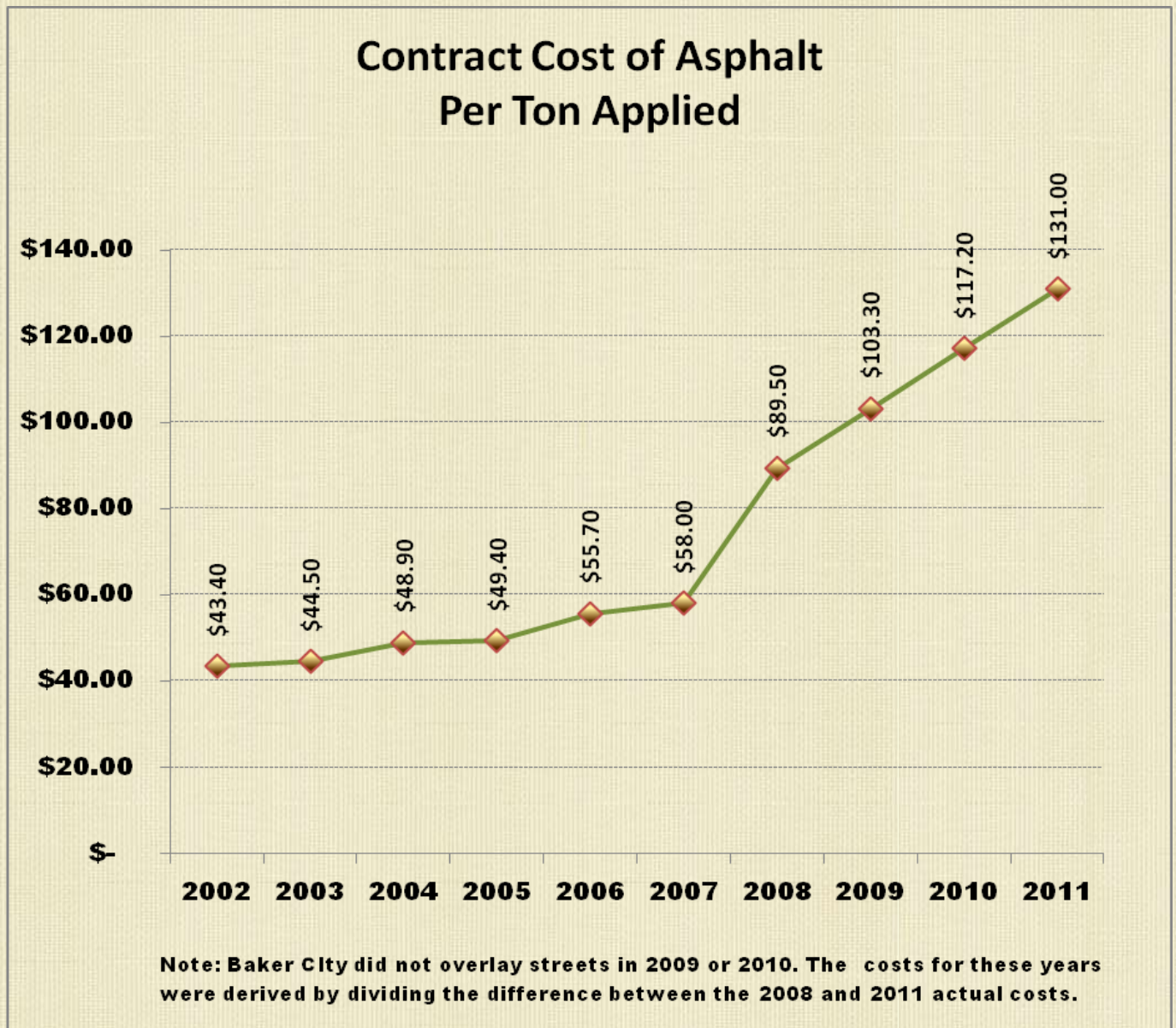
“The True Cost of Deferring Maintenance”

The graph below illustrates the approximate cost to treat every street with the recommended treatment for its condition category for each of the last 10 years. The graph further demonstrates the level of maintenance needed but not funded for each of those years. As you can see, these deferred maintenance costs continue to rise.



“The True Cost of Deferring Maintenance”

Illustrated below is a major contributor to the escalating cost of overlays – the ever increasing cost of asphalt application. Although not demonstrated by this graph, the costs of fog seal and chip seal oils also continue to increase. These combined factors are directly related to our dwindling purchasing power.





BENEFITS OF PAVEMENT MANAGEMENT –

Pavement management is a planning and budgeting tool to help managers make more consistent, cost effective, and defensible decisions about what work to do and when to do it. It helps decision making by providing information about inventory, condition, and cost of various preventative maintenance procedures.



Table of Contents

TITLE	PAGE
Overall Pavement Management Goal	1
Project Objectives	1
2013 Maintenance Tasks	2
2013 Maintenance Curve	3
2013 Street Maintenance Tasks Estimate	4
2013 Treatment Tasks Area Map	5
2012 Annual Street Condition Ratings Mileage Chart	6
2012 Annual Asphalt Street Condition Rating Graph.....	7
2012 Asphalt Wearing Surface Age Graph	8
2012 vs. 2003 Asphalt Condition Rating Percentage Charts	9
Program Background	10
Sample Asphalt Pavement Rating Form	11
Definitions of Pavement Condition Categories	12
Street Maintenance Procedures.....	13
Examples - Very Good Street Condition	14
Examples - Good Street Condition	15
Examples - Fair Street Condition.	16
Examples - Poor Street Condition.....	17
Examples - Very Poor Street Condition.....	17
2012 Treated Streets Area Map	18
2012 City Street Condition Ratings with Categories Map	19

It is unlikely that traffic levels will decrease in the future or that pavements will get so good that they never need repair. Similarly, it is unlikely that major increases in funding for transportation will occur in the near future. The need for efficient management is greater today than ever before, and for pavements, the tool for efficiency is a good pavement management system.

“Overall Pavement Management Goal”

Maintain Baker City’s existing transportation system at the highest level possible with the funds available.

Program Objectives¹

1. Keep most of Baker City’s paved streets in the “Very Good” or “Good” category.
2. Do not allow any street to remain in the “Poor” category for more than 2 years.
3. Do not allow any paved street to deteriorate below the “Poor” category.
4. Increase the percentage in the “Very Good” category.
5. Monitor deterioration patterns. Recognize future needs and plan to minimize their impact.

Review of Achievements Toward Objectives

1. The program continues to meet objective number one. Currently 64% of Baker City’s paved streets are in the “Very Good” and “Good” categories. Our ongoing analysis continues to demonstrate that band-aid treatments, like the single chip seal, temporarily elevate or maintain ratings on streets that are otherwise showing a steady decline.
2. There are currently eight street sections in the “Poor” category. A large portion of these sections comprises Resort Street from Auburn to Campbell which is scheduled for reconstruction in 2013.
3. We are seeing a downward trend in pavement conditions with overall deterioration continuing to overwhelm our resources available to address the needed maintenance. The sections in the “Poor” category reached one mile this year with one section, Clifford Street, remaining in the “Very Poor” category for the second year.
4. Maintaining this objective is largely influenced by community growth and addition of new subdivision streets or streets constructed with assistance of grant program funding. Without new construction, additions to the “Very Good” category are the result of overlay projects or chip sealing of higher rating “Good” streets. Raising the percentage by adding new streets is more indicative of current community growth than success of the “Pavement Management Plan”. New streets incorporated into the system add increased pavement maintenance responsibilities to the program. Nearly 3.5 miles (over 61000 yd²) of pavement have been added to the system since 2002.
5. We continue to monitor and analyze deterioration patterns in our pavement system. Current and future needs have been identified in past reports. We continue to systematically set priorities and utilize available resources to provide the best use of the taxpayer dollar.

¹ For those unfamiliar with the program, a detailed explanation of the pavement rating system is provided beginning on page 10.

“Overall Pavement Management Plan” – Continued

2013 Maintenance Tasks²

Continuing to focus on program objectives 1 – 4, maintenance activities for 2013 will include overlaying 'E' Street from 8th to College Streets (5492 yd²) and chip sealing just over 3 miles (56,733yd²) of city streets.

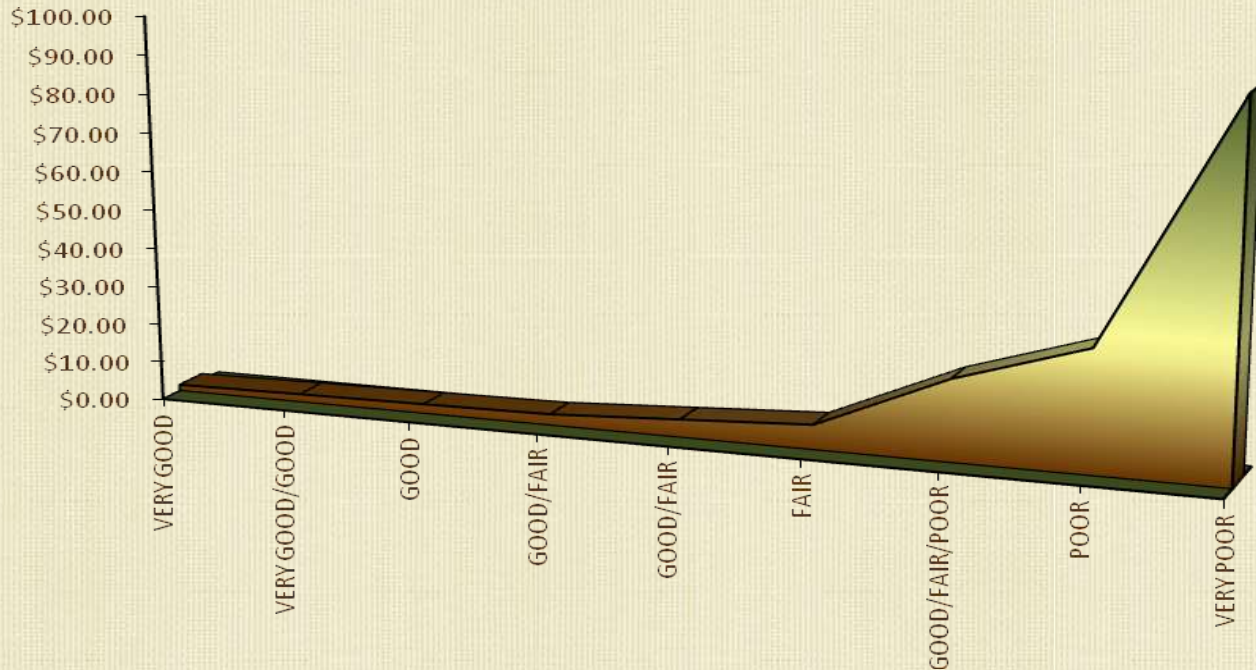
Selection criteria for the chip seal streets this year primarily consists of the following: Streets recommended for chip seal during the pavement rating process with a numerical rating from low-good to mid-fair that have not been chip sealed since the program was reinstated in 2007.



2013 PAVEMENT MANAGEMENT PLAN

² See page 13 for a detailed explanation of maintenance procedures.

“2013 Pavement Maintenance Cost Curve”



STREET CATEGORY	COST PER SQUARE YARD	TYPE OF MAINTENANCE
VERY GOOD	\$1.65	FOG SEAL (NO PREP)
VERY GOOD/GOOD	\$2.10	1/4"-10 SINGLE CHIP (NO PREP)
GOOD	\$2.49	FOG SEAL (INCLUDING PATCHING)
GOOD/FAIR	\$2.88	3/8"-1/4" SINGLE CHIP SEAL (SOME PREP)
GOOD/FAIR	\$4.69	DOUBLE CHIP SEAL (SOME PATCHING)
FAIR	\$6.48	DOUBLE CHIP SEAL (CONSIDERABLE PATCHING)
GOOD/FAIR/POOR	\$21.20 ³	THIN OVERLAY (MINOR PATCHING)
POOR	\$31.80 ³	THIN OVERLAY (CONSIDERABLE PATCHING)
VERY POOR	\$95.40 ³	REBUILD

This graph represents the very foundation upon which the Pavement Management Plan was developed. Maintaining streets in the “Fair”, “Good”, and “Very Good” categories provides the citizens of Baker City with the most cost effective transportation system.

³ Added cost for required ADA Compliance is not included in these estimated amounts.

“2013 Maintenance Task Estimate”

RECOMMENDED TREATMENT

	MILEAGE	SQUARE YARDS	ESTIMATED COST PER SQUARE YARD	TOTAL COST
ASPHALT THIN OVERLAY				
Application	.20	5,492	\$33.37	\$183,268
Prep, Patch, Misc				\$ 98,300
Stormwater System Construction				\$ 79,500
ADA Required Sidewalk Construction				\$ 44,855
2013 ASPHALT THIN OVERLAY SUB TOTAL				\$405,923
CHIP SEAL				
Application to City Streets		56,733	\$ 2.15	\$121,976
Prep & Patch City Streets		56,733	\$ 0.73	\$ 41,415
2013 CHIP SEAL SUB TOTAL				\$163,391
2013 MAINTENANCE TASKS SUBTOTAL				\$569,314
ENGINEERING (10%)				\$ 56,931
ADMINISTRATION (8.5%)				\$ 53,231
CONTINGENCY (10%)				\$ 67,948
2013 MAINTENANCE TASKS TOTAL				\$747,424

Revenue for pavement maintenance work comes from the Surface Transportation Program (STP) and the Serial Maintenance Levy (now a portion of the tax base).

Last year the Public Works Advisory Committee and the City Council opted to hold funds intended for overlay of ‘E’ Street for one year in order to complete a larger project in 2013. The purpose of this was to hopefully receive more favorable bid prices with a larger project and possibly take advantage of the Resort Street paving to assist in keeping the cost lower.

In order to complete the entire ‘E’ Street overlay during the 2013 construction season, we are proposing using the funds reserved from 2012 in addition to a portion of the funding for 2014. Preventative maintenance task amounts for 2014 would reflect a reduction based on the amount spent in 2013 to complete this work.

**2013 PAVEMENT
MANAGEMENT PLAN**

*STREETS TARGETED
FOR TREATMENT*

THE PROPOSED PREVENTATIVE MAINTENANCE WORK FOR 2013 CONSISTS OF APPROXIMATELY 5,492 SQUARE YARDS OF THIN OVERLAY AND 56,733 SQUARE YARDS OF CHIP SEAL IMPROVEMENTS APPLIED TO CITY STREETS.

“2012 Annual Street Condition Ratings Mileage⁴”

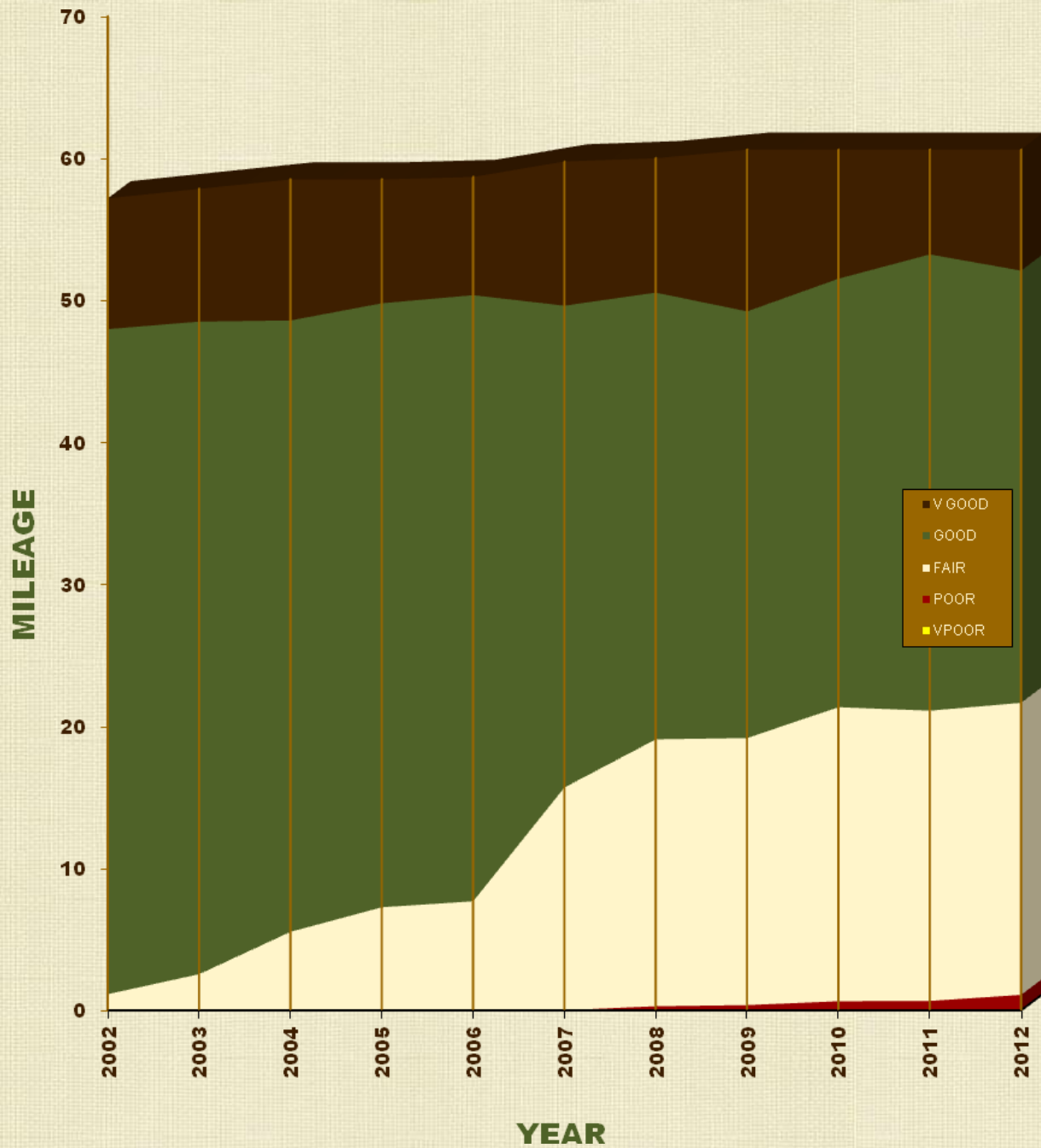
	Very Good	Good	Fair	Poor	Very Poor	Total Miles Asphalt Streets	Gravel Double Chip	Gravel Collector	Gravel Local	Total Miles Gravel Streets	Total Miles Unopened Streets	Total Miles All Streets
2012	8.52	30.44	20.57	1.00	0.08	60.61	0.82	1.01	7.81	9.64	11.47	81.72
2011	7.38	32.13	20.44	0.58	0.08	60.61	0.82	1.01	7.81	9.64	11.47	81.72
2010	9.09	30.18	20.71	0.63	0.00	60.61	0.82	1.01	7.81	9.64	11.47	81.72
2009	11.39	30.05	18.81	0.36	0.00	60.61	0.82	1.14	8.06	10.02	11.70	82.33
2008	9.46	31.46	18.80	0.28	0.00	60.00	0.82	1.14	8.06	10.02	11.70	81.72
2007	10.16	33.93	15.69	0.00	0.00	59.78	0.82	1.14	7.95	9.91	11.80	81.49
2006	8.33	42.69	7.67	0.00	0.00	58.69	0.82	1.14	7.95	9.91	11.98	80.58
2005	8.72	42.54	7.25	0.00	0.00	58.51	0.82	1.14	7.95	9.91	11.98	80.40
2004	9.93	43.06	5.52	0.00	0.00	58.51	0.82	1.14	7.95	9.91	11.98	80.40
2003	9.35	45.96	2.54	0.00	0.00	57.85	0.82	1.27	7.95	10.04	11.98	79.87
2002	9.21	46.84	1.13	0.00	0.00	57.18	0.82	1.27	7.95	10.04	11.98	79.20
2000	7.30	47.20	2.76	0.00	0.00	57.26	New Category Added in 2002	1.77	8.19	9.96	11.98	79.20
1999	6.18	49.81	1.16	0.00	0.00	57.15		1.77	8.19	9.96	11.98	79.09
1998	6.81	48.78	0.90	0.00	0.00	56.49		2.10	8.19	10.29	12.13	78.91
1997	5.33	50.72	0.17	0.00	0.00	56.22		2.18	8.24	10.42	12.00	78.64
1996	6.04	49.38	0.55	0.00	0.00	55.97		2.18	8.24	10.42	12.00	78.39
1995	5.58	48.34	1.41	0.00	0.00	55.33		4.50	6.20	10.70	12.28	78.31
1994	6.85	45.34	2.88	0.00	0.00	55.07		4.50	6.20	10.70	12.54	78.31
1993	7.20	43.04	3.98	0.00	0.00	54.22		4.77	6.20	10.97	12.56	77.75
1992	6.95	44.09	2.66	0.00	0.00	53.70		5.22	6.20	11.42	13.08	78.20
1991	6.45	39.00	7.37	0.02	0.14	52.98		5.87	6.33	12.20	13.00	78.18
1990	6.84	38.31	5.47	1.05	1.31	52.98		5.87	6.33	12.20	13.00	78.18
1989	6.62	36.04	6.57	1.98	1.30	52.51		5.94	6.93	12.87	12.77	78.15

Due to weather conditions in 2001, the annual street inspection was not completed. Partial inspection showed some degradation.

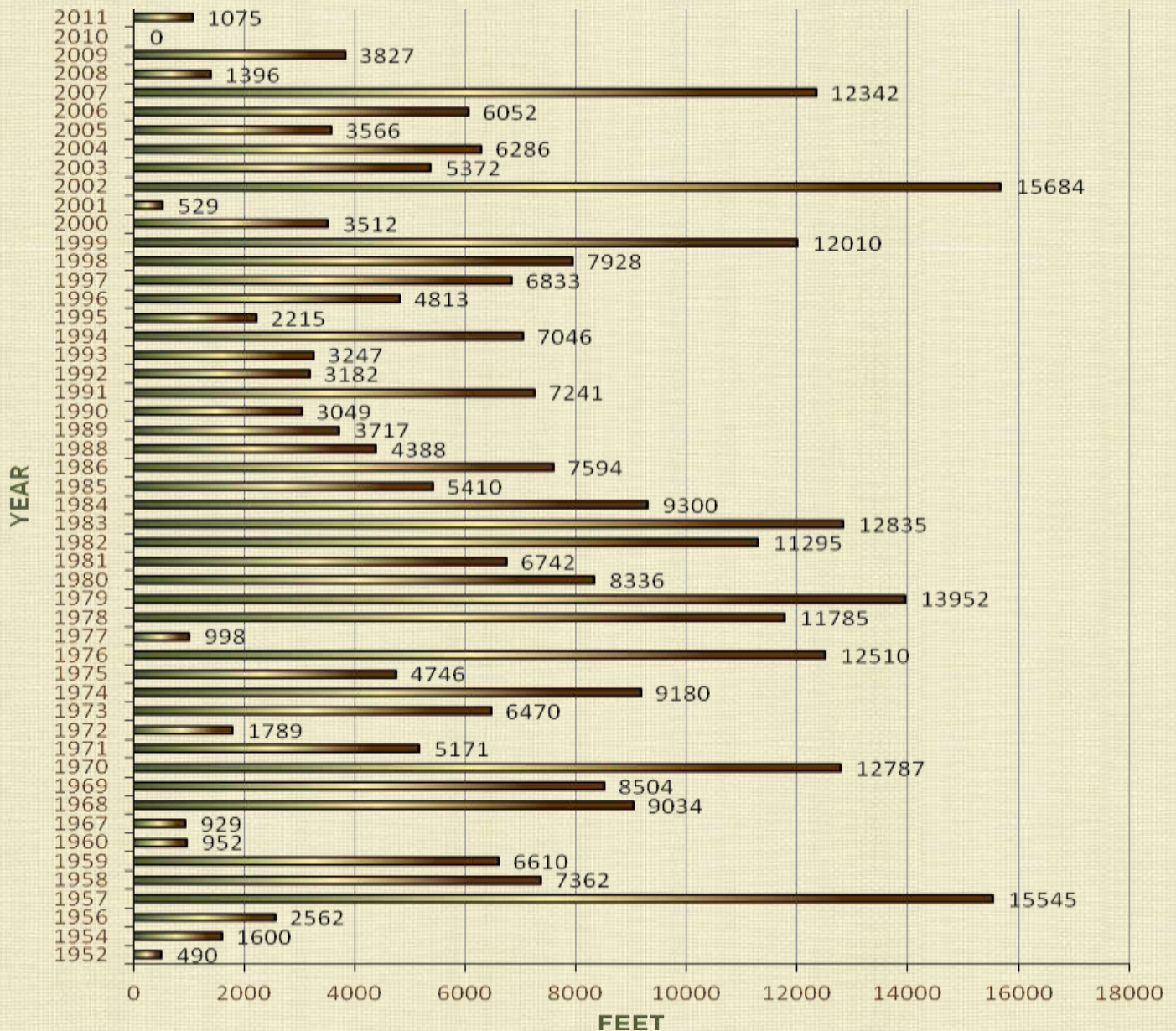
* In order to conform to the 1996 Transportation Plan, some gravel streets were reclassified.

⁴ See page 12 for a detailed explanation of the ratings categories.

“2012 Annual Asphalt Condition Ratings”



“2012 Age of Current Asphalt Wearing Surfaces”

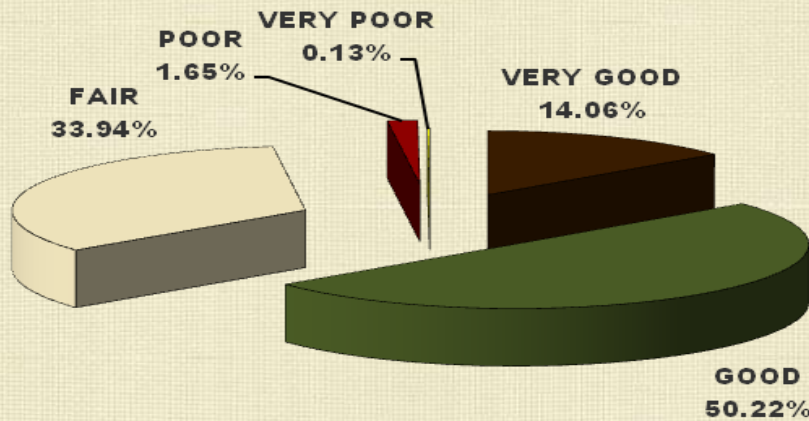


This chart illustrates how many feet of new asphalt (original construction or thin overlay) were applied in each calendar year for the last 60 years. The absence of a year, or years, indicates that new asphalt was not applied that year. The bar labeled 1957 has 15,545 feet (2.94 miles) of streets that were newly paved that year. Those streets represented in those 15,545 feet have not received any substantial asphalt treatment in over 55 years. The average life expectancy for an asphalt street is 20-25 years depending on the time of construction, type of base, etc. NOTE: Chip seals and fog seals are not considered substantial asphalt surface treatments for the purpose of this illustration.

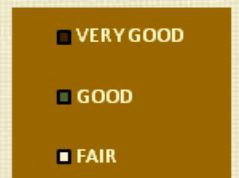
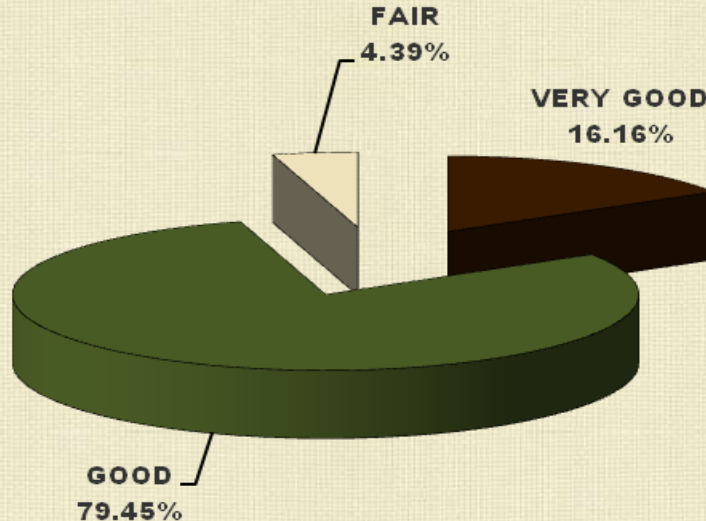
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MANAGEMENT PLAN**

“2012 vs. 2003 Asphalt Streets Condition Ratings”

2012 ASPHALT STREET PERCENTAGES



2003 ASPHALT STREET PERCENTAGES



The street treatment budget in 2003 was \$328,525. Treatment tasks accomplished that year included 50 days of crack fill application, asphalt thin overlay application to 1.02 miles of city streets, and fog seal application to 15.9 miles. This year we are proposing to apply asphalt thin overlay to 0.20 miles, and apply chip seal to approximately 56,733 square yards of asphalt surface to an estimated cost of \$748,937. This amount includes approximately \$114,159 reserved for the overlay from the 2012 maintenance budget and a proposal to utilize a portion of the funds for 2014 maintenance in order to complete the overlay in concert with the Resort Street paving project scheduled to be completed in 2013.

“Program Background”

In the fall of each year, usually around the first of October, a City of Baker City engineering technician drives along each paved city street and conducts an inspection. During this inspection the following items are analyzed:

- The street’s ride quality
- Surface cracking
- Trench settlement
- Drainage issues

Additionally, any other items that affect the street’s structural integrity are noted.

It is through this inspection that each street is rated. The rating assists in determining what maintenance techniques, if any, will be recommended for that street

Each street is placed into a category by visually rating the defects found in each section of pavement. A street starts with a rating value of 100. The number of defects found, based on the visual inspection, are subtracted from 100 to arrive at the rating value for that section. Each category has a range of values. The rated street is placed in the appropriate category based upon the rating value. There are five categories, ranging from “Very Good” to Very Poor”, used to report the street section’s condition.



**2013 PAVEMENT
MANAGEMENT PLAN**

"Sample Pavement Rating Form"

ASPHALT PAVEMENT RATING FORM

DATE

9/26

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STREET	ZONE	ROUTE	LENGTH
Cherry - Auburn to Washington	NE	373	919

Defects			
Cracks			
TYPE	RATING INSTRUCTIONS	RATING	COMMENTS
Transverse	Rate 0 - 10 (10= Major Crack at 25' Intervals)	4	
Longitudinal	Rate 0 - 5 (5= Joint Cracks Full Length of Block)	1	
Alligator	Rate 0 - 60 (60= 100% of Road Surface)	-	
Shrinkage	Rate 0 - 60 (60= 100% of Road Surface)	2	
Subtotal crack defects ratings (cannot exceed 60)			7

other defects			
TYPE	RATING INSTRUCTIONS	RATING	COMMENTS
Trench Settlement or Bad Patching	Rate 0 - 10	1	
Pot Holes	Rate 0 - 5 (5 = Five per Block)	-	
Deficient Drainage	Rate 0 - 5	-	
Base Failure	Rate 0 - 5	-	
Other Defects	Rate 0 - 10 Corrugations ☐ Raveling ☐ Rutting ☐	-	
Subtotal other defects ratings (cannot exceed 40)			1

overall ride quality			
TYPE	INSTRUCTIONS	QUANTITY	RATING
Transverse Crack	1 Noticeable/50'=15	15	12
Patch or Settlement	1 Noticeable/100'=10	3	3
Subtotal Ride Quality Ratings (Maximum 20)			15
overall ride quality converted rating (use subtotal above)			3
total defects ratings (cracks-other-overall r.q.)			11

suggested maintenance							
Overlay	DCH	Crackfill	1st Priority	Crackfill 2nd Priority	Asphalt Crackfill	Grind and Overlay	Fog Seal
							Patching

condition rating			
Possible Points	Defects	Rating	2011 Rating
100	11	89	90

Categories				
Very Good 100 - 98	Good 97 - 89	Fair 88 - 70	Poor 69 - 45	Very Poor 44 - 0

Other Comments:

weeds		Ride Quality Conversion Chart	
Ride Quality	Defect Rating	Ride Quality	Defect Rating
1 - 6	1	13 - 17	3
7 - 12	2	18 - 20	4

“Definition of Pavement Condition Categories”

Very Good

Definition

Stable, no more than an occasional crack, excellent ride qualities. These streets usually have been constructed or overlaid recently. Recommended treatments are fog seal or ¼”-#10 chip seal to prevent oxidation and possibly minor crack filling. Currently 14.06% of Baker City’s asphalt streets are in this category.

Rating Range

100 - 98

Good

Definition

Stable, good ride qualities. Distress characteristics may include: grey or light-colored appearance (due to oxidation), some transverse and longitudinal cracking, and possibly isolated trench settlement. Recommended treatments are crack filling, fog seal, chip seal, and possibly thin overlay. Currently 50.22% of Baker City’s asphalt streets are in this category. In 2011 53.01% of asphalt streets were in this category. 2010 saw that percentage at 49.79%.

Rating Range

97 - 89

Fair

Definition

Generally stable, though minor areas of structural weakness may be evident. Ride qualities are good to fair. Distress characteristics may include: transverse, longitudinal, and occasional alligator cracking; trench settlement; or drainage deficiencies. Recommended treatment is extensive patching and chip seal application or thin overlay. Currently 33.94% of Baker City’s asphalt streets are in this category.

Rating Range

88 - 70

Poor

Definition

Areas of instability with evidence of structural deficiency. Ride qualities range from fair to poor. Distress characteristics may include transverse, longitudinal, alligator, and shrinkage cracking. Trench settlement and drainage deficiencies will also be evident. If the street base is in such condition that rehabilitation is possible, an overlay is recommended; otherwise street reconstruction is necessary. The first two treatments would require extensive crack filling and patching. 1.65% (26,632.6 square yards) of Baker City’s paved streets fell to this category in 2012, compared to 17,779.2 square yards last year.

Rating Range

69 - 45

Very Poor

Definition

Many areas of instability with obvious structural deficiencies. Ride qualities are very poor. Distress characteristics will mostly be alligator and shrinkage cracking with potholes, extensive trench settlement, and drainage deficiencies. Cost of continually maintaining the pavement in acceptable condition exceeds available maintenance funds. Although the recommended treatment is to perform emergency maintenance only, and to schedule reconstruction as soon as possible, with current funding constraints we now have to look at other factors such as traffic flow, and balance the need vs. utilizing funds to perform preventative maintenance work on an arterial or collector street. One Baker City street (.08% - 1,251 square yards), the first to fall into this category since 1991, remains in this category for the second consecutive year.

Rating Range

44 - 0

2013 PAVEMENT MANAGEMENT PLAN

“Street Maintenance Procedures”

Crack Fill

This work consists of filling existing narrow cracks with a hot liquid asphalt compound or emulsified asphalt sealer (CRF). This seals the crack and keeps moisture from penetrating the asphalt and street base. Wide cracks are filled with a ¼” mix of hot asphalt compacted into and overlapping the cracks, then sealant is applied to the surface to effectively fill the crack.

Thin Overlay

This work consists of placing a thin asphalt mat, generally one and one half inch thick, on an existing asphalt street. An asphalt pre-level mat may be applied prior to the top mat with a motor grader or paving machine. Patching, crack filling, and other rehabilitation work are completed in preparation for this procedure. A fog seal or ¼”-#10 chip seal is applied within two years of the overlay work in order to seal the new asphalt. “Fair” or “Good” category streets with solid bases are generally targeted for thin overlays.

1/4”-10” Single Chip Seal

This work consists of an application of emulsified asphalt and a single layer of graded aggregate. Aggregate is usually ¼”-#10. Patching and crack filling are not generally necessary for this work. Streets in the “Very Good” and “Good” categories are targeted for this treatment.

3/8”-1/4” Single Chip Seal

This work consists of an application of emulsified asphalt and a single layer of graded aggregate. Aggregate is usually ⅜”-¼” in size. Patching and crack filling are done in preparation for this work. Streets in the “Fair” and “Good” categories are traditionally single chip sealed using this procedure.

Double Chip Seal

This work is similar to the single chip seal. Usually a ⅜”-¼” chip aggregate is applied, loose rock swept up, then a ¼”-#10 chip aggregate is applied over the ⅜”-¼” layer. Extensive patching is completed prior to any chip seal application. This procedure is generally used on streets in the “Fair” to “Good” categories.

Fog Seal

This work consists of an emulsified asphalt coating applied to the existing asphalt surface. The coating seals and rejuvenates the existing asphalt. This process is a preventative maintenance procedure which extends the operational life of the street. “Good” and “Very Good” streets are fog sealed, as well as any newly constructed or overlaid streets. Products used in the past have included CRF with a sand blotter, and GSB-88.

“Street Condition - Very Good”

Distress characteristics are minimal, usually consisting of no more than an occasional crack.

10th Street Auburn - Myrtle

Originally constructed in 1996, this minor arterial has been the recipient of two thin overlays, in 1996 and again in 2006, in addition to a gsb-88 seal coat in 2006 as well. This street section spent a brief time in the “Fair” category in 2004 & 2005. The most recent overlay moved it back into the “Very Good” category, where it remains this year.

This street is part of the truck route, providing an alternate route to the downtown corridor for truck traffic north and south through Baker City.



2nd Street Auburn - Broadway

This urban collector street was a recipient of a thin overlay and gsb-88 seal coat in 2006, as well as a chip seal in 2012.

Originally constructed in 1981, this street sees substantial traffic due in part to its close proximity to our downtown area and local businesses.



2013 PAVEMENT MANAGEMENT PLAN

“Street Condition - Good”

Distress characteristics may consist of transverse or longitudinal cracking, lighter coloring and isolated trench settlement.

Birch Street

Campbell – ‘A’



This street section, an urban collector, was reconstructed in 2004 as part of the construction of Birch Street north to ‘H’ Street. In addition a gsb-88 seal coat was applied after construction in 2004 as well. This street section descended to the top of the “Good” category in 2009 with a rating of 97, which it maintained in 2012.

This street provides access to fuel stations, restaurants, and retail shopping in the east Baker City area, in addition to providing access to the recently constructed ‘D’ Street which allows an alternate to Campbell Street for travel east and west through the city.

1st Street

Auburn - Dewey

This urban collector street has received three chip seals, the most recent in 2008. It has also been the recipient of two fog seals.

Originally constructed in 1968, this street also sees substantial traffic due in part to its close proximity to our downtown area and government offices.



“Street Condition - Fair”

Distress characteristics may include transverse, longitudinal, and occasional alligator cracking, trench settlement, drainage deficiencies and/or poor ride quality.

Grandview Dr.

Auburn - Myrtle

This local street was originally constructed in 1957. It has received three preventative maintenance treatments through the years, including two chip seals and most recently a fog seal in 1993.

Although this is a local residential street, it was constructed to a width of 50 feet, much wider than is typical. This wider asphalt surface makes this more costly to treat than other residential street sections.



‘E’ Street

Cedar - Birch

This local street was constructed in 1979, and has been the recipient of a thin overlay in 1997 and fog seal in 1998.

This residential street has a rating of 79 for 2012, putting in the middle of the “Fair” category.



**2013 PAVEMENT
MANAGEMENT PLAN**

“Street Condition – Poor & Very Poor”

Madison Street

Main to Resort



Although classed as local, this street section sees considerable traffic as it provides access to a car dealership, local library, and retail businesses. It also provides a quick shortcut when avoiding the traffic at Main and Campbell Streets.

This section was constructed in 1968, has been the recipient of chip and fog seals. This street section descended into the “Fair” category in 2007, and has seen a steady ratings decline, arriving in the “Poor” category in 2012.

Clifford Street

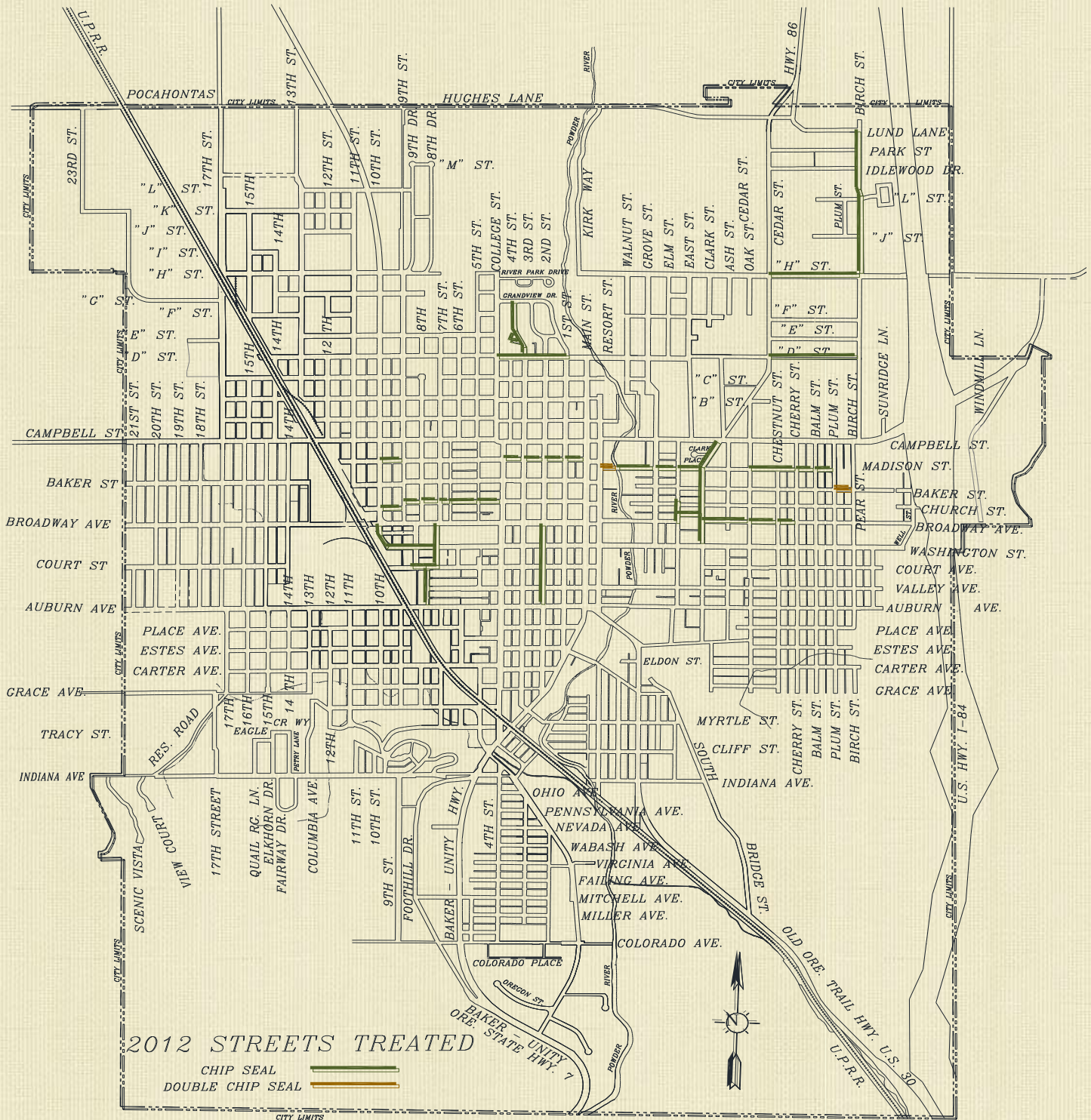
Washington - South

Clifford Street was originally constructed in 1975. It gained the infamous distinction of becoming the first street in the “Very Poor” category since 1991 by rating a 43 in 2011, and rating 42 in 2012.

Clifford Street provides local access to 13 residences and terminates at a cul-de-sac approximately 402 feet south of Washington Avenue.

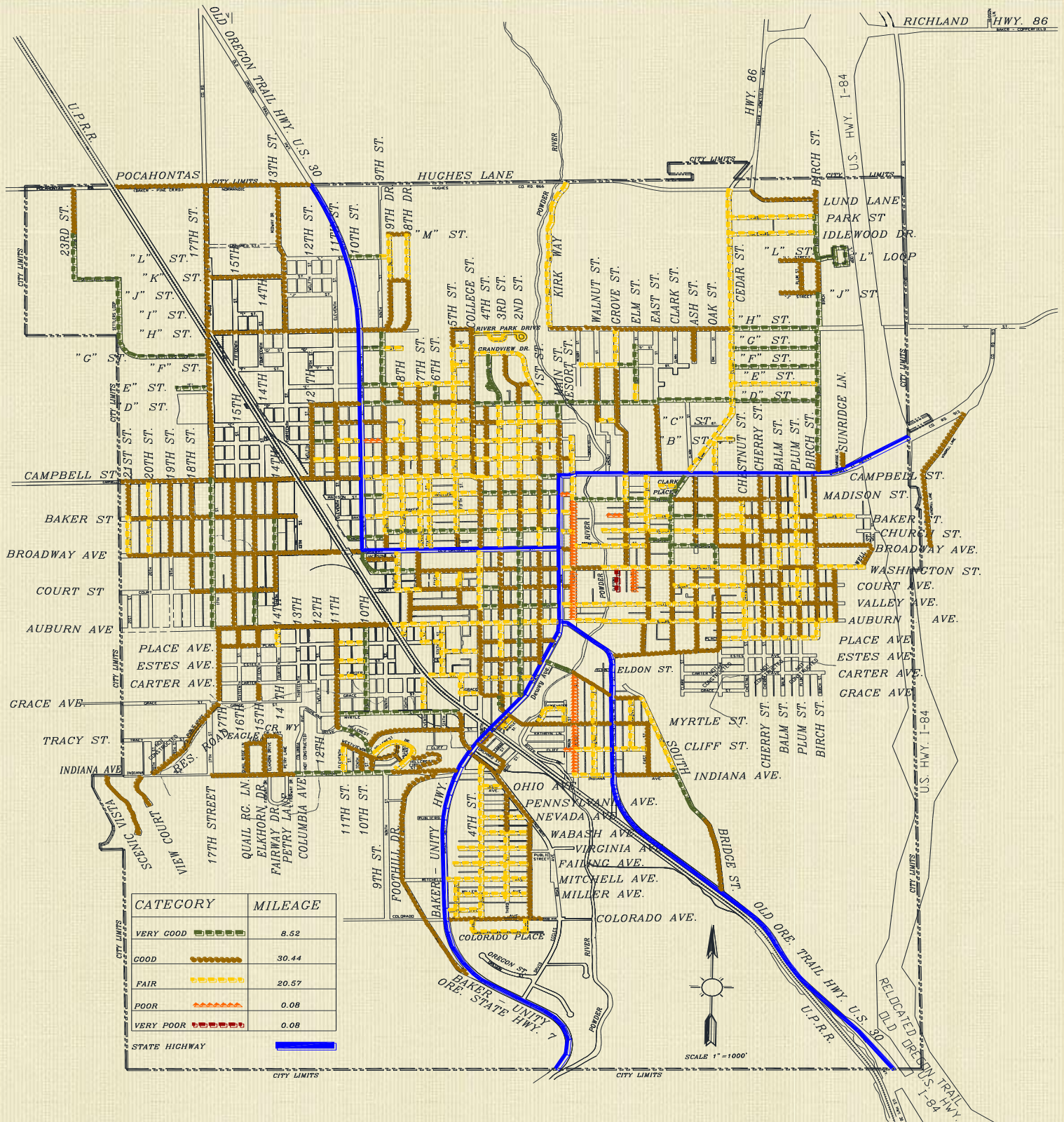


“2012 Streets Treated”



2013 PAVEMENT MANAGEMENT PLAN

"2012 Street Conditions Ratings"



“2012 Chip Seal Project”



Assessment

Accuracy



Prevention



“2012 Trench Work and Patching”

Teamwork



Dedication



Completion

BAKER CITY PUBLIC WORKS

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