



Balance of Preservation, Maintenance, and Expansion

ROCKY MOUNTAIN
PAVEMENT PRESERVATION CONFERENCE
Boise, Idaho
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Bingham County Road & Bridge

- 1,229 Total Center Line Miles of Roads
 - 665 Miles of Oil Road
 - 678.7 Miles on our Chip Seal List
 - 556 Miles of Gravel Roads
 - 8 Miles of Unimproved Roads
- 190 Bridges > 20'
- 143 Bridges < 20'



What Bingham County Does That Is Unique

- 
- Inventory
 - Evaluate Condition
 - Drainage
 - Repairs - Patching
 - Crack Sealing
 - Chip Sealing
 - Snow Plowing
 - Replacement - (Bituminous Surface Treatment) (BST)



Inventory Your Roads

- Keep track of their condition using
 - GIS Data Base
 - Spread Sheet
 - Notebooks
- Just do what is easiest for you – remember it needs to have a history.

Evaluate the Roads with a Pavement Index

- This can be rather complex and consume huge resources; or,
- The principles can be applied and simplified.



Simplified Evaluation of Oil Roads



A	Excellent	New
B	Good	Good Condition - Only chip seals required
C	Fair	Maintenance - More than chip sealing (patching)
D	Poor	Leveling Course Road is uneven to drive on (overlay, etc)
F	Failed	Reconstruction Needed
O	Not Rated	Other (dirt)

Roads Will Not Last If There Is Not Adequate Drainage.





Pavement Breaks Up In Early Spring If The Shoulders Are Wet.

- Causing rutting
- Cracking
- Base failure
- Potholes



Use a Patching Material With 98% Fractured Stone

- Use MC-500 oil

Benefits:

- Patch is stable and does not roll
- Fills in voids and settling points in the roads
- Reduces rutting



Bingham County

Developed a Very Aggressive PMP.

- When oil was cheaper we were chip-sealing 100 miles a year; and
- Replacing 5 to 6 bridges a year with local funds.
 - (NOTE) Bingham County currently averages 1,500 tons of patching material on the 665 miles of asphalt per year. This averages 2.26 tons per mile. - **Decreasing each year**



Patching is minimized when

- Chip sealing is done on a regular basis (every 5 to 7 years recommended)
- Roads have crowns, slopes, and adequate drainage



Bingham County – Chip Sealing

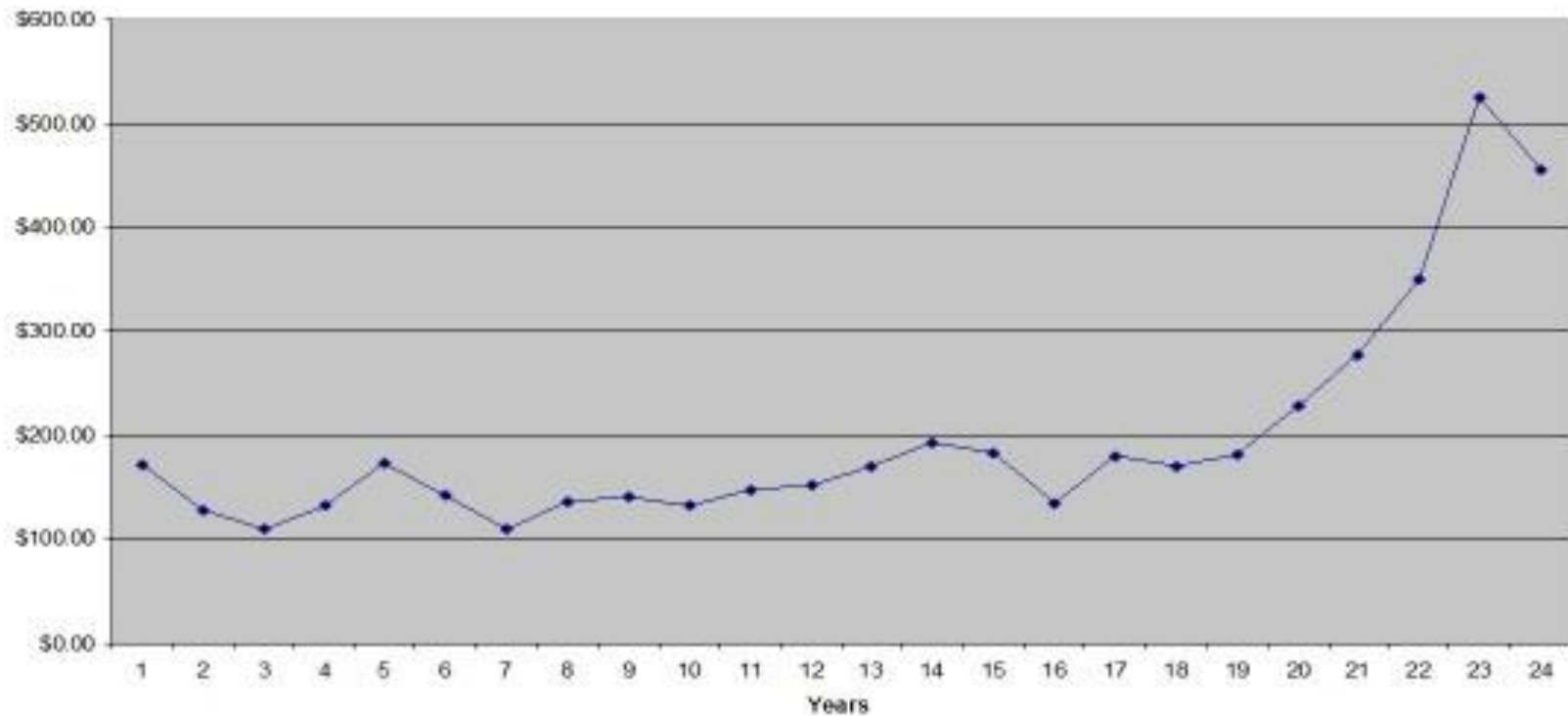
678.7 miles / 7 years =
96.96 miles per year



Chip-Sealing – Cost Per Ton Last 25 years

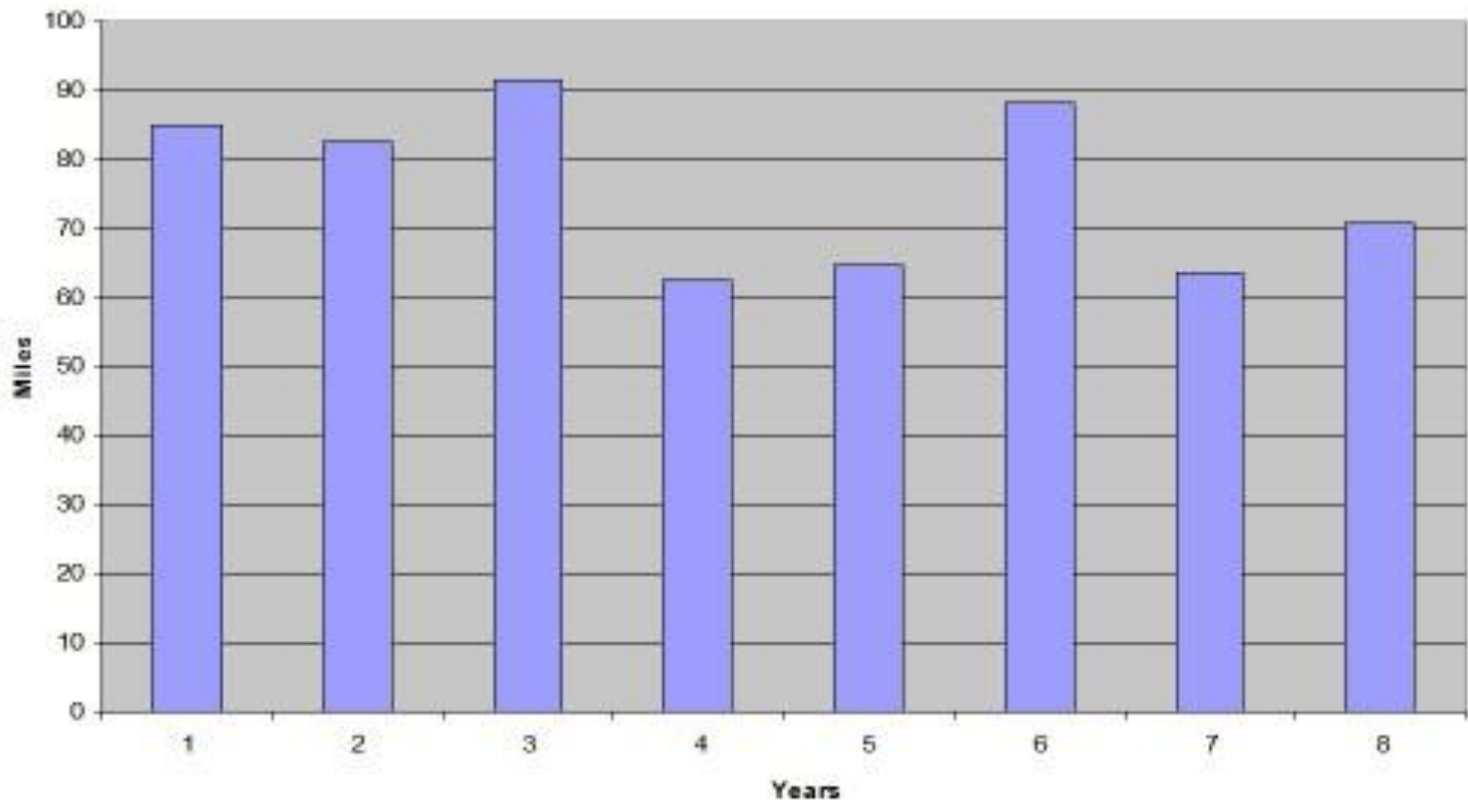


CRS-2



Actual

Miles of Chip-Sealing Per Year





A Unique Thing Bingham County Does

- Uses patching material that has 98% fracture
- Uses chips for roads with cracks that have 11% secondary reject fines in them.
 - Adds strength to the asphalt layer
 - Keeps the other rocks from moving around
 - Fills in hair line cracks in roads

Snow Plowing - Snow Wings on Plows Preserve the Pavement.



- Provide room for snow to drift – off of the road
- Breaks the crust of the snow and increases evaporation
- Allows the shoulder to dry



Replacement / Construction / Reconstruction

Sometimes the best solution is to
rebuild / reconstruct.

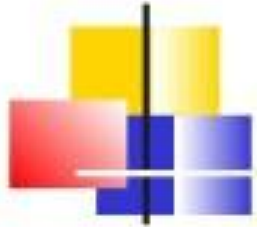
Consider what Bingham County does with
CRS-2 (chip seal oil)

Bituminous Surface Treatment B.S.T.

Turns out 1 1/2 to 1 3/4 inches of asphalt at **one third the cost** of a hot mix mat

- Place a good base on the road
- Top, slope, compact, etc. 3/4 <
- Put two or three chip seals on the road
 - Details in Appendix
 - Failures turn out like Oreo cookies

Bituminous Surface Treatment B.S.T.



APPENDAGE

BST Process - 1

- a) The triple shot bituminous surface treatment and crushed gravel course shall be constructed under the direction of the Public Works Department and shall consist of an application of penetration asphalt followed by two applications of crushed gravel seal coats. The Public Works Department must check all applications.

APPENDAGE

BST Process - 2

- b) The previously placed base material shall be shaped and rolled using a tandem steel wheel roller prior to the application of the asphalt penetration coat. The ambient air temperature shall be at least 70 degrees Fahrenheit and rising at the time of the application of the penetration shot.

APPENDAGE

BST Process - 3

- c) The type of asphalt to be used for the penetration shot shall be specified by the Public Works Department. The asphalt material shall be heated to its upper range for spraying temperature as recommended by the Asphalt Institute prior to application. The application rate shall be 0.50 to 0.60 gallons per square yard. The time allowed for the oil to penetrate between the application of the oil and the application of the cover material shall be specified by the Public Works Department representative.

APPENDAGE

BST Process – 4

5/8 < chip w/11% secondary reject

Definition : The cover coat material shall meet the requirements of the Public Works Department. The application rate for the cover coat shall be approximately 25-30 pounds per square yard and shall be rolled with a pneumatic wheel roller. Following the penetration application, the mat shall be rolled with a steel wheel roller.

APPENDAGE

BST Process - 5

- d) Cover material should be placed in enough volume – just to cover the oil. Care should be given to avoid having to broom and/or flush with water to remove all loose materials and dust. The Public Works Department shall specify the type of liquid asphalt. Application rate shall be 0.50 gallons per square yard. Approved crushed gravel shall be applied with a chip spreader and rolled with a pneumatic wheel roller immediately behind the distributor. Application rate for crushed gravel shall be 44 to 50 pounds per square yard. Once again roll with pneumatic rollers and a steel drum roller may be used.

APPENDAGE

BST Process - 6

- e) If this treatment is used, a third crushed gravel seal shall be placed on the roadway the following year using the same specification listed in item "d." This third coat may be placed on immediately following the second application if the chips on the second application are reduced to have just enough to cover the oil.



Number of Miles of Oil Roads

Bingham County Oil Road Condition Report Comparing 2006 – 2009

Thursday, October 08, 2009

Condition			2006	2007	2008	2008	2009
A	Excellent	New		0	13.55	0	61.84
B	Good	Good Condition - Only chip seals required	0.00	354.28	15.83	425.96	537.49
C	Fair	Maintenance - More than chip sealing (patching)	291.06	188.78	296.35	151.03	137.48
D	Poor	Leveling Course Road is uneven to drive on (overlay etc)	191.83	126.15	139.56	95.17	8.61
F	Failed	Reconstruction Needed	182.00	0	77.43	78.22	0.39
O	Not Rated	Other (dirt)	0	0	24.62	27.67	0
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