

# LAKES HIGHWAY DISTRICT

## 2012 STATE OF OUR ROADS REPORT

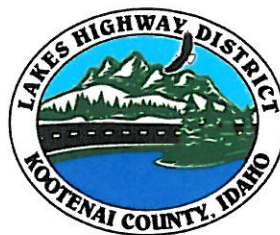
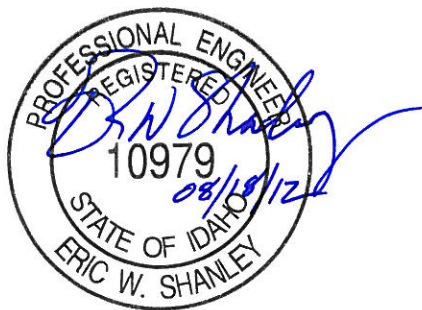
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East Hayden Lake Road, Full Depth Reclamation Project Completed in 2011

*PREPARED BY:*

LAKES HIGHWAY DISTRICT  
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Director of Highways



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## Executive Summary

In 2010 Lakes Highway District conducted a Pavement Management Plan Study estimating that our roads had 14 years of Average Remaining Service Life (ARSL). The conclusions and recommendations from this report were to at least maintain the same quality of roads as the District moves forward into the future.

Since our original pavement management work that was completed in 2010, Lakes Highway District performed a complete visual inspection and distress rating on our entire paved road network. All 242 centerline miles of roads were reevaluated in accordance with the Metropolitan Transportation Commission (MTC) and the District's Pavement Management Program, Streetsaver was updated with the new inspection data. Inspections were completed in June of 2012.

The maintenance decision tree treatments and costs were reviewed and updated to reflect current pavement maintenance treatment prices. Maintenance and Rehabilitation history data was updated for road maintenance projects completed in 2010 to 2011. A Budgetary Needs Analysis was then performed based on the updated inspections, treatment costs and six budget scenarios were evaluated to compare the effects of various funding levels.

Given the completed distress rating of the District's 242 centerline miles of roads the resulting average Pavement Condition Index ("PCI") is 81. Using a 0-100 PCI scale, with 100 being the most favorable, a rating of 81 classifies the District's road network in the lower 'Very Good' condition category (Condition Category I).

PCI	PAVEMENT CONDITION CATAGORY	
100 90 <b>LHD 81</b>	I VERY GOOD	
70 50	II GOOD (non-load related)	III GOOD (load related)
25	IV POOR	
0	V VERY POOR	

In comparison to the analysis completed in 2010, RSL was also recalculated as part of this study and determined to be slightly better, up from 14-years to 17-years. The increase in RSL is attributed to a more complete visual distress rating of the roads that was completed in accordance with MTC Standards.



## District Pavement Condition Summary

The Districts total road network comprises of 242 centerline miles of roadway, and not only includes paved surfaces, but also curbs, gutters and sidewalks, storm drains, traffic signal and lights that are necessary for functioning roadways. To replace the Districts paved road network would cost \$145-million at \$600-thousand per mile. The roadway network provides access to jobs, homes, schools, shopping and recreation, and is vital to the regions livability and economic health. As with any asset, regular maintenance is required in order to ensure serviceability.

Every year, local jurisdictions analyze pavement conditions to help gauge their success in maintaining their local road networks. LHD, in turn, collects this information to determine the state of repair. LHD uses a Pavement Condition Index (PCI) scoring system that rates segments of paved roads on a scale from 0 to 100. LHD looks at the percentage of the District's roads that fall into various condition categories, ranging from a low of "failed" to a high of "excellent."

## Conclusions and Recommendations

Based on the most recent analysis of our road network within Lakes Highway District, the condition of our pavement is very good. The typical stretch of asphalt shows minor weathering and will likely require lower cost maintenance techniques such as chip sealing and overlays.

In order to continue optimizing the quality of roads throughout our entire road network, the District needs to adopt a "keep our good roads in good condition" approach and to do so; the District needs to at least keep up with inflation with a base budget allocation of \$2,225,000. With this approach however and looking beyond a reasonable 20-year horizon, it is important to note that it is inevitable that our pavements will still gradually become more expensive to maintain over time. Accordingly, it will become increasingly more difficult to maintain an equivalent Network PCI that we see given today's available funding.

A strategy that the District may want to consider in the future would be to refocus its attention from a network perspective, to a primarily maintenance of its main routes (major collectors and arterials) perspective. This approach according to the financial analysis appears to allow the District to maintain an equivalent Network PCI over a longer period of time. However, with either approach, looking beyond 20-years and given the fact that the District has a significant amount of good roads, these roads will become increasingly more expensive to maintain. Therefore, the District needs to carefully monitor its roads over time to minimize its exposure to a "windfall" of good pavements deteriorating all at once.

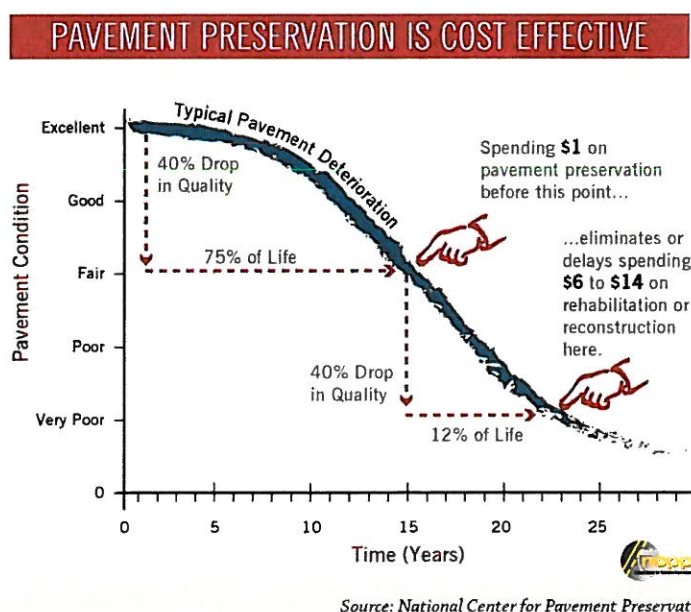


# Pavement Management

## Why is Pavement Management important?

When it comes to moving people and materials in Kootenai County, the roads are our most vital asset. It would cost over \$145 million to replace the existing pavements just here in Lakes Highway District. We believe an investment this important should be carefully preserved and maintained for our residents. Lakes Highway District's Pavement Management Program does just that.

The Pavement Management Program seeks to balance preservation with replacement of existing surfaces. The most cost-efficient way to correct any pavement surface problem is to address issues when they first appear. That is why funds are targeted at roads rated in fair-to-good condition. Without this preventive maintenance, these roads would quickly deteriorate and be much more costly to fix. The following "pavement deterioration curve," illustrates this point. Pavement may appear to be in good condition for a long time. However, when it fails, it fails quickly and repair costs increase dramatically. Preventative maintenance, such as crack sealing, chip seals, pavement cut restoration extends the life of our valuable road system. In addition to lowering costs over time, other advantages of our Pavement Management Program include: more predictable funding needs, fewer premature pavement failures, safer road conditions and reduced time spent in traffic due to construction.



Again, the Pavement Deterioration Curve graph, describes the typical life cycle of a paved road if preservation maintenance is not performed on a consistent basis as the road ages, the cost to maintain it increases significantly. The average PCI of roads in Lakes Highway District (Excellent to Good) is now on the flatter, slower deteriorating portion of the curve. This means that the roads are deteriorating at a slower, but inevitable pace that becomes more expensive over time.

## How do we do Pavement Management?

A complete inspection of all LHD's roads is completed every two years to document their existing condition, one half of the miles each year. This year, Lakes Highway District completed a full network assessment, which allowed the District to more clearly define its road distresses according to current engineering principles and practices. With this information, the LHD chooses roads needing preventive maintenance, resurfacing or reconstruction.

After roads are inspected, a condition index is calculated from 0-100. Generally, roads rated 70-100 are considered "good." One of our goals is to keep "good" roads in "good" condition. When roads begin to fail, they fail quickly and the costs to repair them increases dramatically. While it might be tempting to fix "failed" roads first, this approach would be so expensive that no money would be left for preventive maintenance or rehabilitation of "fair" to "good" roads.

The classifications used in the Districts pavement condition analysis are shown in the following table:

<b>Very Good-Excellent</b> (PCI = 80-100)	Pavements are newly constructed or resurfaced and have few if any signs of distress.
<b>Very Good</b> (PCI = 70-89)	Pavements require mostly preventative maintenance and have only low levels of distress, such as minor cracks or spalling, which occurs when the top layer of asphalt begins to peel or flake off as a result of water permeation.
<b>Good</b> (PCI = 60-69)	Pavement at the low end of this range have significant levels of distress and may require a combination of rehabilitation and preventative maintenance to keep them from deteriorating rapidly.
<b>Good - At Risk</b> (PCI = 50-59)	Pavements are deteriorated and require immediate attention including rehabilitative work. Ride quality is significantly inferior to better pavement categories.
<b>Poor</b> (PCI = 25-49)	Pavements have extensive amounts of distress and require major rehabilitation or reconstruction. Pavements in this category affect the speed and flow of traffic significantly.
<b>Very Poor - Failed</b> (PCI = 0-24)	Pavements need reconstruction and are extremely rough and difficult to drive.

The 2012 pavement condition analysis shows that LHD roads have an average PCI score of 81 and RSL of 17 years, which is slightly better than determined in our 2010 analysis. This score falls in the "Very Good" range, indicating that the typical road in LHD is in the least expensive category to maintain, requiring routine sealing.

## How do we Plan to Meet Our Target PCI – Keep Good Roads Good?

To meet the goal/target of maintaining a PCI of 80, an average annual investment of \$2,225,000 dollars is needed to maintain our existing pavements. This overall condition rating allows the District to effectively manage our roads at the lowest possible cost for maintenance. Maintaining this overall condition rating also allows the District to maintain its existing pavement network in an equivalent condition for the next 20-years.

Due to the high cost of meeting this goal, several funding scenarios were examined and a summary of those results are summarized in the following section. Details of the funding scenarios are presented in the appendices of this report. Each scenario includes three components: annual expenditure for maintenance, expected pavement condition and the backlog maintenance or deferred debt in twenty years. These scenarios demonstrate that time is of the essence. To avoid conveying huge financial burdens to future generations, it is vitally important that preservation maintenance be funded.

## Funding Scenarios

The current budget allocation of \$2,225,000 is distributed according to pavement needs for crack sealing, patching, sealing, overlays, rehabilitation and reconstruction. The following budget scenarios were reviewed with their associated results over 20-years.

Description of Funding Scenario	Current Network PCI	Anticipated Network With treatment PCI, +20 yrs	Anticipated Network Without treatment PCI, +20 yrs
Distribution of Budget to Full Road Network, 3% Inflation & No Budget Increase	81	75	32
Distribution of Budget to Full Road Network, 3% Inflation & 3% Budget Increase	81	76	32
Distribution of Budget to Collector Road Network, 3% Inflation & No Budget Increase	81	79	32
Distribution of Budget to Collector Road Network, 3% Inflation & 3% Budget Increase	81	80	32
Distribution of Budget to Full Road Network -\$600k in Funding to Existing Pavements, 3% Inflation & 3% Budget Increase  *Note: this scenario would consider redirecting funding to paving an existing gravel road – not maintaining existing AC	81	69	32



## Funding Considerations

With public expectations of pavement condition and maintenance service levels remaining at least constant, we are experiencing increased costs necessary to maintain our roads. From the local level and unfortunately for the sake of our local constituents, there has been no action at the State level to properly adjust transportation **user** based fees (revenue) in nearly 16 years (since 1996). This has ultimately forced local elected officials to continually increase property tax to offset increased costs. As a result, property taxes in our District now account for over **70%** of our revenue vs. **46%** in the 1996.

Material costs for asphalt oils and fuel for our maintenance equipment that are necessary to maintain our roads have increased 300% and 500%, respectively since 1996. With this in consideration, local transportation officials are continually faced with trying to preserve our aging pavements in good condition with limited funding options and in turn trying to avoid having to replace our road infrastructure given an unimaginable cost of replacement (\$600,000 to \$1,000,000 per centerline mile of road).

In 2012, the Lakes Highway District levee rate is \$72 per \$100,000 of assessed taxable value. If the Lakes Highway District were to take a 3% increase in 2013, this would increase the levee rate to \$74/\$100,000.

## Conclusions and Recommendations

Based on the most recent analysis of our road network within Lakes Highway District, the condition of our pavement is very good. The typical stretch of asphalt shows minor weathering and will likely require lower cost maintenance techniques such as chip sealing and overlays.

In order to continue optimizing the quality of roads throughout our entire road network, the District needs to adopt a “keep our good roads in good condition” approach and to do so; the District needs to at least keep up with inflation with a base budget allocation of \$2,225,000. With this approach however and looking beyond a reasonable 20-year horizon, it is important to note that it is inevitable that our pavements will still gradually become more expensive to maintain over time. Accordingly, it will become increasingly more difficult to maintain an equivalent Network PCI that we see given today’s available funding.

A strategy that the District may want to consider in the future would be to refocus its attention from a network perspective, to a primarily maintenance of its main routes (major collectors and arterials) perspective. This approach according to the financial analysis appears to allow the District to maintain an equivalent Network PCI over a longer period of time. However, with either approach, looking beyond a reasonable 20-year horizon and the fact that the District has a significant amount of good roads, these roads will become increasingly more expensive to maintain. Therefore, the District needs to carefully monitor its roads over time to minimize its exposure to a “windfall” of good pavements deteriorating all at once.



## Pavement Condition Ratings & Images

### Example Excellent Condition Pavement, PCI: 80-100



Example Road: East Hayden Lake Road

Honeysuckle to the Dike

PCI = 100

As a general rule, if the condition rating is between 80 and 100, normal maintenance operations such as: crack filling, pothole repair and seal coating is all that is required. If the condition drops below 80, it is likely that an overlay or some other form of more extensive maintenance will be required. If the condition drops below 30 a major rehabilitation or reconstruction is required.



## Example of Good Condition Pavement, PCI: 70-80



Example Road: Rimrock Road

Wildflower to York Ct.

PCI = 70

A typical repair for a pavement in good condition that is showing signs of minor raveling and temperature cracking would be a chip seal. However, given the pavement continues to age (see deterioration curve), a Full Depth Reclamation and Overlay would be expected approximately 9-10 years following the next chip seal. Costs for a chip seal would be approximately \$2.00 per square yard. Costs for a FDR and overlay range from \$16-\$30 per square yard dependant of thickness of the asphalt overlay and size of project.



## Example of Fair Condition Pavement, PCI 50-70 w/light Alligator Cracking and Raveling



Example Road: Avondale Loop Road

Miles to Avondale Lane

PCI = 61

A typical repair for light cracking and weathering would be a thin overlay (2"). Costs for a thin overlay would be approximately \$10-\$12 per square yard.

**Example of At-Risk Pavement, PCI: 50-70 w/Medium to Severe Alligator Cracking, Rutting and Weathering**



Example Road: East Hayden Lake Road

Dodd to Rockaway Bay

PCI = 56

A typical repair for Condition Category III would be a Full Depth Reclamation (FDR) with a pavement overlay. Costs for a FDR and overlay range from \$16-\$30 per square yard dependant of thickness of the asphalt overlay and size of project.



## Example of Poor Condition Pavement, PCI: 25-50 w/Medium Alligator Cracking



Example Road: Garwood Road

Circle S Trail to Circle S Trail

PCI = 48

A typical repair for Condition Category III would be a Full Depth Reclamation (FDR) with a pavement overlay. Costs for a FDR and overlay range from \$16-\$30 per square yard dependant of thickness of the asphalt overlay and size of project.



## Example of Failed Condition Pavement, PCI <25



Example Road: Miles Avenue

PCI = 21

A typical repair for a failed pavement would be reconstruction of the existing pavement. Costs for a reconstruction project would be approximately \$40 per square yard, excluding right-of-way costs required to improve a road to District Standards.

## References

1. Joseph P. Bort, "Pavement Condition Index Distress Identification Manual for Asphalt and Surface Treatment Pavements," The Metropolitan Transportation Commission, Oakland, CA October 2002.
2. AASHTO, "Guide for Design of Pavement Structures," American Association of State Highway and Transportation Officials, 1993.
3. Smith, R.E., S. Rodenborn & J. Wiggins, "Bay Area PMS User Guide," The Metropolitan Transportation Commission, Oakland, CA 1986.
4. Shahin, M.Y. and S.D. Kohn, "Pavement Maintenance Management for Roads and Parking Lots," U.S. Army Corps of Engineers, Technical Report M-294, October 1981.
5. APWA, "APWA-COE PAVER Pavement Condition Index Field Manual, Asphalt," American Public Works Association, 1983.

## Definitions

**Annual Costs** – Any costs associated with the annual maintenance and repair of the facility.

**Chip Seal** – A surface treatment in which a pavement surface is sprayed with asphalt (generally emulsified) and then immediately covered with aggregate and rolled. Chip seals are used primarily to seal the surface of a pavement with non load-associated cracks and to improve surface friction, although they also are commonly used as a wearing course on low volume roads.

**Corrective Maintenance** – Maintenance performed once a deficiency occurs in the pavement; i.e., loss of friction, moderate to severe rutting, extensive cracking or raveling.

**Crack Filling** – The placement of materials into non-working cracks to substantially reduce infiltration of water and to reinforce the adjacent pavement. Working cracks are defined as those that experience significant horizontal movements, generally greater than about 2 mm (0.1 in.). Crack filling should be distinguished from crack sealing.

**Crack Sealing** – A maintenance procedure that involves placement of specialized materials into working cracks using unique configurations to reduce the intrusion of incompressibles into the crack and to prevent intrusion of water into the underlying pavement layers. Working cracks are defined as those that experience significant horizontal movements, generally greater than about 2 mm (0.1 in.).

**Emulsified Asphalt** – An emulsion of asphalt cement and water, which contains a small amount of an emulsifying agent. Emulsified asphalt droplets, which are suspended in water, may be either the anionic (negative charge) or cationic (positive charge) type, depending upon the emulsifying agent.

**Equivalent Uniform Annual Cost (EUAC)** – The net present value of all discounted cost and benefits of an alternative as if they were to occur uniformly throughout the analysis period. Net Present Value (NPV) is the discounted monetary value of expected benefits (i.e., benefits minus costs).

**Fog Seal** – A light application of slow setting asphalt emulsion diluted with water. It is used to renew old asphalt surfaces and to seal small cracks and surface voids.

**Hot Mix Asphalt (HMA)** – High quality, thoroughly controlled hot mixture of asphalt cement and well graded, high quality aggregate thoroughly compacted into a uniform dense mass.

**Life Cycle Costing** – An economic assessment of an item, system, or facility and competing design alternatives considering all significant costs of ownership over the economic life, expressed in terms of equivalent dollars.



**Net Present Value** – The present value of future expenditures or costs discounted using an appropriate interest rate.

**Pavement Preservation** – The sum of all activities undertaken to provide and maintain serviceable roadways. This includes corrective maintenance and preventive maintenance, as well as minor rehabilitation projects.

**Pavement Preventive Maintenance** – Planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without increasing the structural capacity).

**Pavement Reconstruction** – Construction of the equivalent of a new pavement structure which usually involves complete removal and replacement of the existing pavement structure including new and/or recycled materials.

**Pavement Rehabilitation** – Work undertaken to extend the service life of an existing pavement. This includes the restoration, placing an overlay, and/or other work required to return an existing roadway to a condition of structural and functional adequacy.

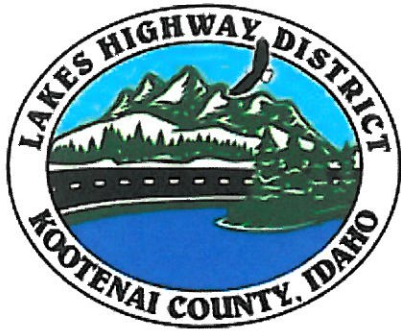
**Present Worth Method** – Economic method that requires conversion of costs and benefits by discounting all present and future costs to a single point in time, usually at or around the time of the first expenditure.

**Salvage Value** – The remaining worth of the pavement at the end of the analysis period. There are generally two components of salvage value: residual value, the net value from recycling the pavement, and serviceable life, the remaining life of the pavement at the end of the analysis period.

**Slurry Seal** – A mixture of slow setting emulsified asphalt, well graded fine aggregate, mineral filler, and water. It is used to fill cracks and seal areas of old pavements, to restore a uniform surface texture, to seal the surface to prevent moisture and air intrusion into the pavement, and to provide skid resistance.

**Surface Texture** – The characteristics of the pavement surface that contribute to both surface friction and noise.

**User Costs** – Costs incurred by highway users traveling on the facility and the excess costs incurred by those who cannot use the facility because of either agency or self-imposed detour requirements. User costs typically are comprised of vehicle operating costs (VOC), accident costs, and user delay costs.



Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Network Summary Statistics

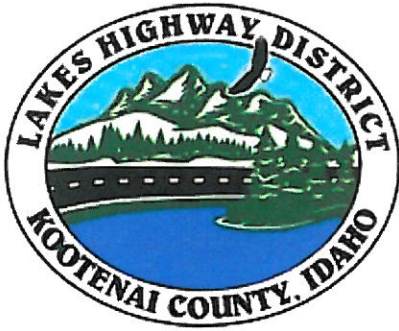
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	Total Sections	Total Center Miles	Total Lane Miles	PCI
Rural Minor Arterial (06)	42	13.54	32.31	78
Rural Major Collector (07)	92	72.03	144.70	80
Rural Minor Collector (08)	93	55.54	111.33	81
Residential/Local	400	118.78	237.04	82
** Combined	0	0.00	0.00	N/A
Total	627	259.89	525.39	

Overall Network PCI as of 7/25/2012: 81

\*\* Combined Sections are those without a PCI Date - they have not been inspected or had a Treatment applied.





Lakes Highway District, Idaho  
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## Scenarios - Network Condition Summary

Interest: 0%

Inflation: 3%

Printed: 08/23/2012

Scenario: 2013 Network Projection with 3% Increase in PM

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2013	\$2,225,000	20%	2014	\$2,291,750	20%	2015	\$2,360,503	20%
2016	\$2,431,318	20%	2017	\$2,504,257	20%	2018	\$2,579,385	20%
2019	\$2,656,766	20%	2020	\$2,736,469	20%	2021	\$2,818,563	20%
2022	\$2,903,120	20%	2023	\$2,990,214	20%	2024	\$3,079,920	20%
2025	\$3,172,318	20%	2026	\$3,267,488	20%	2027	\$3,365,512	20%
2028	\$3,466,478	20%	2029	\$3,570,472	20%	2030	\$3,677,586	20%
2031	\$3,787,914	20%	2032	\$3,901,551	20%			

### Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment
2013	79	81
2014	77	81
2015	75	81
2016	73	85
2017	71	82
2018	69	82
2019	67	82
2020	65	82
2021	63	82
2022	60	81
2023	58	81
2024	56	81
2025	53	81
2026	51	80
2027	48	79
2028	45	79
2029	42	78
2030	39	77
2031	36	77
2032	32	76

Percent Network Area by Functional Classification and Condition Class  
Condition in base year 2013, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
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## Scenarios - Network Condition Summary

Printed: 08/23/2012

Scenario: 2013 Network Projection with 3%  
Increase in PM

I	6.3%	45.4%	36.6%	0.0%	88.3%
II / III	0.3%	5.2%	2.5%	0.0%	7.9%
IV	0.2%	1.3%	0.6%	0.0%	2.1%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2013 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	6.3%	47.3%	38.3%	0.0%	91.9%
II / III	0.2%	3.7%	0.9%	0.0%	4.8%
IV	0.2%	1.0%	0.5%	0.0%	1.7%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2032 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	5.1%	35.2%	37.8%	0.0%	78.1%
II / III	0.8%	6.9%	1.9%	0.0%	9.5%
IV	1.5%	10.9%	0.0%	0.0%	12.4%
Total	7.4%	52.9%	39.7%	0.0%	100.0%





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## Scenarios - Network Condition Summary

Interest: 0%

Inflation: 3%

Printed: 08/23/2012

Scenario: 2013 Network Projection with 0% Increase to PM

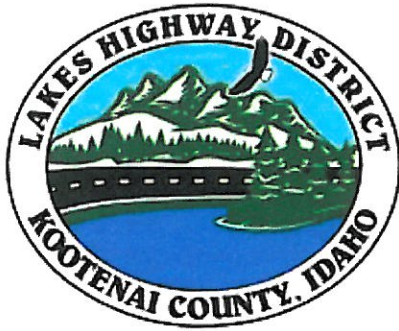
Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2013	\$2,225,000	20%	2014	\$2,225,000	20%	2015	\$2,225,000	20%
2016	\$2,225,000	20%	2017	\$2,225,000	20%	2018	\$2,225,000	20%
2019	\$2,225,000	20%	2020	\$2,225,000	20%	2021	\$2,225,000	20%
2022	\$2,225,000	20%	2023	\$2,225,000	20%	2024	\$2,225,000	20%
2025	\$2,225,000	20%	2026	\$2,225,000	20%	2027	\$2,225,000	20%
2028	\$2,225,000	20%	2029	\$2,225,000	20%	2030	\$2,225,000	20%
2031	\$2,225,000	20%	2032	\$2,225,000	20%			

### Projected Network Average PCI by year

<u>Year</u>	<u>Never Treated</u>	<u>With Selected Treatment</u>
2013	79	81
2014	77	81
2015	75	81
2016	73	85
2017	71	82
2018	69	82
2019	67	82
2020	65	82
2021	63	82
2022	60	81
2023	58	81
2024	56	81
2025	53	80
2026	51	80
2027	48	79
2028	45	78
2029	42	78
2030	39	77
2031	36	76
2032	32	75

Percent Network Area by Functional Classification and Condition Class  
Condition in base year 2013, prior to applying treatments.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
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## Scenarios - Network Condition Summary

Printed: 08/23/2012

Scenario: 2013 Network Projection with 0%  
Increase to PM

I	6.3%	45.4%	36.6%	0.0%	88.3%
II / III	0.3%	5.2%	2.5%	0.0%	7.9%
IV	0.2%	1.3%	0.6%	0.0%	2.1%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2013 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	6.3%	47.3%	38.3%	0.0%	91.9%
II / III	0.2%	3.7%	0.9%	0.0%	4.8%
IV	0.2%	1.0%	0.5%	0.0%	1.7%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2032 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	5.0%	34.2%	37.8%	0.0%	77.0%
II / III	0.9%	6.7%	1.9%	0.0%	9.5%
IV	1.4%	11.9%	0.0%	0.0%	13.3%
V	0.1%	0.0%	0.0%	0.0%	0.1%
Total	7.4%	52.9%	39.7%	0.0%	100.0%





Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Scenarios - Network Condition Summary

Interest: 0%

Inflation: 3%

Printed: 08/23/2012

Scenario: 2013 PM Budget Allocation -\$600k  
with 3% Increase

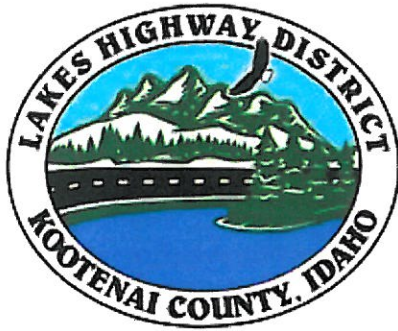
Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2013	\$1,625,000	20%	2014	\$1,673,750	20%	2015	\$1,723,963	20%
2016	\$1,775,681	20%	2017	\$1,828,952	20%	2018	\$1,883,820	20%
2019	\$1,940,335	20%	2020	\$1,998,545	20%	2021	\$2,058,501	20%
2022	\$2,120,256	20%	2023	\$2,183,864	20%	2024	\$2,249,380	20%
2025	\$2,316,861	20%	2026	\$2,386,367	20%	2027	\$2,457,958	20%
2028	\$2,531,697	20%	2029	\$2,607,648	20%	2030	\$2,685,877	20%
2031	\$2,766,454	20%	2032	\$2,849,447	20%			

### Projected Network Average PCI by year

<u>Year</u>	<u>Never Treated</u>	<u>With Selected Treatment</u>
2013	79	81
2014	77	80
2015	75	80
2016	73	83
2017	71	80
2018	69	79
2019	67	79
2020	65	78
2021	63	78
2022	60	77
2023	58	77
2024	56	76
2025	53	76
2026	51	75
2027	48	74
2028	45	73
2029	42	72
2030	39	71
2031	36	70
2032	32	69

Percent Network Area by Functional Classification and Condition Class  
Condition in base year 2013, prior to applying treatments.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
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Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Scenarios - Network Condition Summary

Printed: 08/23/2012

Scenario: 2013 PM Budget Allocation -\$600k  
with 3% Increase

I	6.3%	45.4%	36.6%	0.0%	88.3%
II / III	0.3%	5.2%	2.5%	0.0%	7.9%
IV	0.2%	1.3%	0.6%	0.0%	2.1%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

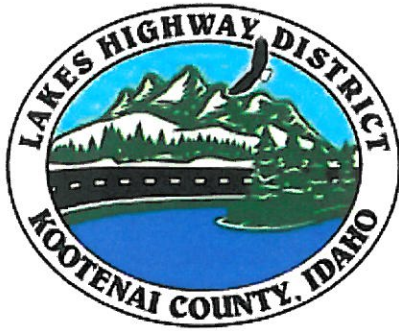
### Percent Network Area by Functional Classification and Condition Class Condition in year 2013 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	6.3%	46.5%	38.3%	0.0%	91.2%
II / III	0.2%	4.3%	0.9%	0.0%	5.4%
IV	0.2%	1.1%	0.5%	0.0%	1.8%
V	0.6%	1.0%	0.0%	0.0%	1.6%
Total	7.4%	52.9%	39.7%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2032 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	1.9%	28.3%	37.9%	0.0%	68.2%
II / III	2.1%	5.7%	1.6%	0.0%	9.5%
IV	2.6%	13.7%	0.2%	0.0%	16.5%
V	0.7%	5.2%	0.0%	0.0%	5.9%
Total	7.4%	52.9%	39.7%	0.0%	100.0%





Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Scenarios - Network Condition Summary

Interest: 0%

Inflation: 3%

Printed: 08/23/2012

Scenario: 2013 Arterial & Collector Projection  
with 3% Incr

Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2013	\$2,225,000	20%	2014	\$2,291,750	20%	2015	\$2,360,503	20%
2016	\$2,431,318	20%	2017	\$2,504,257	20%	2018	\$2,579,385	20%
2019	\$2,656,766	20%	2020	\$2,736,469	20%	2021	\$2,818,563	20%
2022	\$2,903,120	20%	2023	\$2,990,214	20%	2024	\$3,079,920	20%
2025	\$3,172,318	20%	2026	\$3,267,488	20%	2027	\$3,365,512	20%
2028	\$3,466,478	20%	2029	\$3,570,472	20%	2030	\$3,677,586	20%
2031	\$3,787,914	20%	2032	\$3,901,551	20%			

### Projected Network Average PCI by year

Year	Never Treated	Treated with Scenario Criteria
2013	78	81
2014	76	82
2015	74	81
2016	72	86
2017	69	84
2018	67	84
2019	65	82
2020	62	83
2021	60	83
2022	57	82
2023	55	82
2024	52	82
2025	49	82
2026	46	82
2027	43	81
2028	40	81
2029	37	81
2030	33	80
2031	29	80
2032	25	80

Percent Network Area by Functional Classification and Condition Class  
Condition in base year 2013, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
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Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Scenarios - Network Condition Summary

Printed: 08/23/2012

Scenario: 2013 Arterial & Collector Projection  
with 3% Incr

I	10.4%	75.3%	0.0%	0.0%	85.8%
II / III	0.5%	8.6%	0.0%	0.0%	9.0%
IV	0.3%	2.2%	0.0%	0.0%	2.5%
V	1.0%	1.7%	0.0%	0.0%	2.7%
<b>Total</b>	<b>12.2%</b>	<b>87.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

### Percent Network Area by Functional Classification and Condition Class Condition in year 2013 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	10.6%	79.7%	0.0%	0.0%	90.3%
II / III	0.4%	4.8%	0.0%	0.0%	5.2%
IV	0.2%	1.6%	0.0%	0.0%	1.8%
V	1.0%	1.7%	0.0%	0.0%	2.7%
<b>Total</b>	<b>12.2%</b>	<b>87.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

### Percent Network Area by Functional Classification and Condition Class Condition in year 2032 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	11.0%	74.2%	0.0%	0.0%	85.2%
II / III	0.2%	7.7%	0.0%	0.0%	8.0%
IV	1.0%	5.8%	0.0%	0.0%	6.8%
<b>Total</b>	<b>12.2%</b>	<b>87.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>





Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
(208) 772-7527

## Scenarios - Network Condition Summary

Interest: 0%

Inflation: 3%

Printed: 08/23/2012

Scenario: 2013 Arterials & Collector Projection  
with 0% Incr

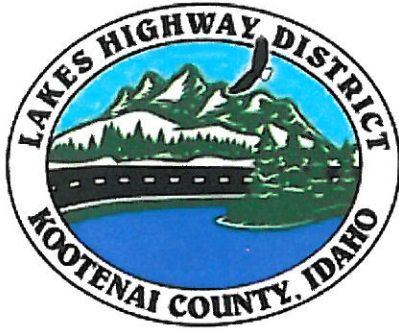
Year	Budget	PM Amt	Year	Budget	PM Amt	Year	Budget	PM Amt
2013	\$2,225,000	20%	2014	\$2,225,000	20%	2015	\$2,225,000	20%
2016	\$2,225,000	20%	2017	\$2,225,000	20%	2018	\$2,225,000	20%
2019	\$2,225,000	20%	2020	\$2,225,000	20%	2021	\$2,225,000	20%
2022	\$2,225,000	20%	2023	\$2,225,000	20%	2024	\$2,225,000	20%
2025	\$2,225,000	20%	2026	\$2,225,000	20%	2027	\$2,225,000	20%
2028	\$2,225,000	20%	2029	\$2,225,000	20%	2030	\$2,225,000	20%
2031	\$2,225,000	20%	2032	\$2,225,000	20%			

### Projected Network Average PCI by year

<u>Year</u>	<u>Never Treated</u>	<u>Treated with Scenario Criteria</u>
2013	78	81
2014	76	81
2015	74	81
2016	72	85
2017	69	84
2018	67	84
2019	65	83
2020	62	83
2021	60	83
2022	57	82
2023	55	82
2024	52	82
2025	49	82
2026	46	82
2027	43	81
2028	40	81
2029	37	80
2030	33	80
2031	29	80
2032	25	79

Percent Network Area by Functional Classification and Condition Class  
Condition in base year 2013, prior to applying treatments.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
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Lakes Highway District, Idaho  
11341 N. Ramsey Road  
Hayden, ID 83835  
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## Scenarios - Network Condition Summary

Printed: 08/23/2012

Scenario: 2013 Arterials & Collector Projection  
with 0% Incr

I	10.4%	75.3%	0.0%	0.0%	85.8%
II / III	0.5%	8.6%	0.0%	0.0%	9.0%
IV	0.3%	2.2%	0.0%	0.0%	2.5%
V	1.0%	1.7%	0.0%	0.0%	2.7%
Total	12.2%	87.8%	0.0%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2013 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	10.6%	79.7%	0.0%	0.0%	90.3%
II / III	0.4%	4.8%	0.0%	0.0%	5.2%
IV	0.2%	1.6%	0.0%	0.0%	1.8%
V	1.0%	1.7%	0.0%	0.0%	2.7%
Total	12.2%	87.8%	0.0%	0.0%	100.0%

### Percent Network Area by Functional Classification and Condition Class Condition in year 2032 after schedulable treatments applied.

<u>Condition Class</u>	<u>Arterial</u>	<u>Collector</u>	<u>Res/Loc</u>	<u>Other</u>	<u>Total</u>
I	11.5%	72.5%	0.0%	0.0%	83.9%
II / III	0.4%	7.4%	0.0%	0.0%	7.9%
IV	0.3%	7.9%	0.0%	0.0%	8.2%
Total	12.2%	87.8%	0.0%	0.0%	100.0%