



SAVE OUR STREETS 2013 YEAR END REPORT



23rd Street SE rebuilt as part of the 2013 SOS Program

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BACKGROUND

THE SOS PROGRAM

The City classifies streets based on the type of traffic they are intended to support. Major streets that are intended to support a large amount of traffic traveling to neighboring jurisdictions, to state highways and across the City are typically classified as **arterial streets**. Streets that are intended to support a moderate amount of traffic and connect neighborhoods and industrial/commercial areas to arterial streets or to other neighborhoods and industrial/commercial areas are generally classified as **collector streets**. Streets that are intended to support a low volume of traffic and connect local residences and businesses to an arterial or collector street are generally classified as **local streets**.

The City currently maintains 214 centerline miles of streets, of which 116 centerline miles (more than half the network) are classified as local streets. In 2004 the public was expressing concern over the condition of these local streets, but funding for local streets had dropped dramatically in the preceding years (see Figure 1) and the City could not afford to make the needed improvements.

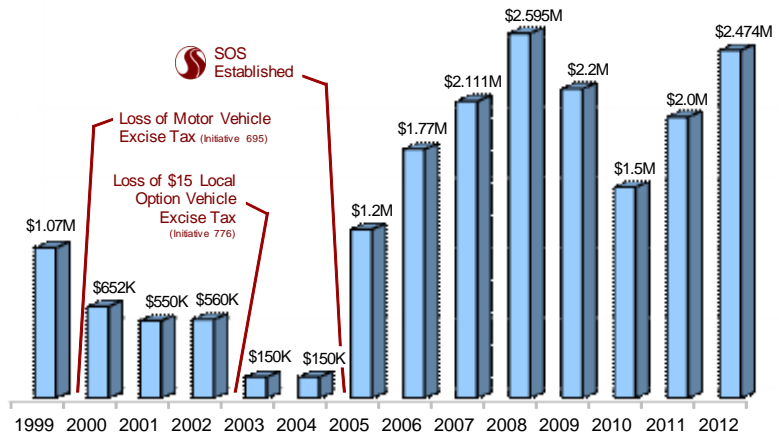


Figure 1: SOS Funding through the years

In response to the situation, the City proposed a funding measure which was approved by Auburn citizens in the November 2004 General Election. The original funding measure allowed the City's property tax levy to generate additional revenue for a **dedicated local street fund** which is used solely to fund a local street preservation and improvement program, called the **Save Our Streets (SOS) Program**. At the end of 2012, the practice of funding the SOS Program from property taxes ended. In 2013, the city council earmarked sales taxes from new construction to be dedicated to the SOS Program, and all property taxes were retained in the General Fund.

In 2005, the City had approximately 59 miles of local streets that were in need of repair (this mileage includes streets that were later annexed into the City in 2008). Since 2005, the SOS Program has improved the condition of 47 miles of those City streets (see map on page 6 for the Completed SOS Projects Map), however as time passes other streets in our network age and their condition continues to deteriorate. In the next few years many of our streets will need to be maintained and/or rebuilt to keep the street system healthy.

AUBURN'S PAVEMENT MANAGEMENT

The City measures pavement condition using the **Pavement Condition Index (or PCI)**. As shown in Figure 2, PCI values represent pavement condition based

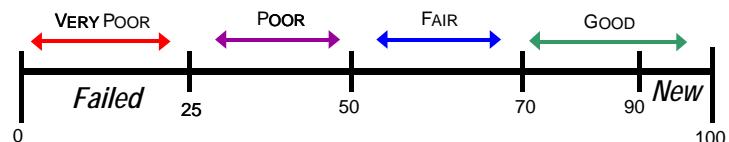


Figure 2: Pavement Condition Index (PCI) Scale

on a scale from 0 to 100 with 100 being newly constructed pavement and 0 indicating the pavement has completely failed. The City’s goal is to maintain local streets so that their PCI values are at or above 70.

PCI values generally indicate the optimal time to repair the pavement. The most cost effective time to preserve pavements is when the PCI ratings are in the 50-70 range, because the pavement repair typically requires relatively inexpensive treatments that simply preserve the existing pavement. Additionally pavement condition tends to diminish at an accelerated rate after they have reached a PCI range of 50-70. Pavements with moderate to low PCI values usually require more expensive rehabilitative treatments. Pavements with very low PCI values are often unsalvageable and have to undergo a very expensive rebuild. Figure 3 shows the various treatments for pavement for different PCI ranges, and the typical life span and cost of each treatment.

Pavement Condition	Typical Treatment	Typical Life of Treatment*	Typical Cost
PCI 90 - 100 Like-New Condition	No Treatment Needed	Not Applicable	\$0
PCI 70 - 89 Good Condition	Seal Cracks – Cracks are sealed with liquid asphalt to prevent water from penetrating the pavement and weakening the base material that forms the foundation for the pavement.	3 - 5 years	\$0.75 per square yard
PCI 50 - 69 Fair Condition	Patching and Thin Overlay – Broken pavement is replaced (patched) to renew the load carrying ability of the existing pavement. Then the road is overlaid with a thin layer of pavement (1½ inch or less in depth) to preserve the existing pavement and provide a smooth driving surface.	10 - 15 years	\$15 to \$20 per square yard
	Chip Seal – A thin layer of liquid asphalt is sprayed over the entire pavement surface and then covered with a thin layer of aggregate. Chip seals typically do not last as long as a thin overlay nor do they provide as smooth of a driving surface.	3 - 10 years	\$5 per square yard
PCI 25 - 49 Poor Condition	Extensive Patching and Thin Overlay – Same treatment as above only more extensive patching is typically required. (Some streets in this condition require a thicker overlay of 2 inches or greater).	10 - 15 years	\$25 to \$30 per square yard
	Double Chip Seal – A thin layer of liquid asphalt is sprayed over the entire pavement surface and then covered with a thin layer of aggregate, then this process is repeated a second time. Based on experience, the City has found that double chip seals typically last longer than single chip seals, especially when the existing pavement is in poor condition.	3 - 10 Years	\$7.50 per square yard
PCI 0 - 24 Very Poor Condition	Rebuild Pavement – Existing pavement is completely removed and a new road is constructed.	20+ years	\$150 to \$200 per square yard

*Life of treatment will vary based on the traffic volume and type of vehicles that use the street, the strength of the pavement and underlying soil, the age of the existing pavement, and the amount of vehicle turning/stopping movements on the street.

Figure 3: Maintenance Decision Matrix for Local Streets

The City surveys Auburn's street system and calculates a PCI value for each street segment. With the help of **pavement management database software**, the City can use the PCI values from the inspections and the treatment costs from the decision matrix (Figure 3 above) to determine the funding needs of the entire local street system. Since the system repair costs exceed what the City can fund in any given year, the City then prioritizes and selects a limited number of streets for each year's SOS program.

During the initial years of the SOS Program, the City focused mainly on preserving streets in fair to poor condition. The reasons for this were twofold: it addressed streets in need of repair, and it prevented those streets from deteriorating to the point that a far more expensive treatment (such as a total rebuild) would be needed. In 2009, many streets in fair to poor condition were preserved and the City also began to rebuild streets that were in very poor condition.

There are many factors the City must consider when determining which streets to rebuild and or rehabilitate each year. One of the most important factors the City considers when choosing which streets to rebuild is the available utility funds to pay for any needed utility replacement work. Many of the water, sewer and storm drainage utility mains that exist under the streets need to be replaced due to damage, age of pipes, pipe material type, or there may be a need for a system upgrade. Replacing the utility mains at the same time as street restoration is more economical and disturbs the neighboring residences only once. Additionally, it prevents a newly restored or treated surface from being damaged by trenching that's needed to replace underground utilities.

City engineering staff also consult with City maintenance supervisors when selecting streets to rehabilitate or rebuild to identify streets that are beyond what maintenance staff can repair themselves. Streets that require more attention are given high priority. Streets with significant drainage problems, significant bumps and dips, and poor ride quality are also given a high priority. Additionally the City considers the number of residents being served by the street; coordination with third party utility companies; and coordination with private property developments when selecting streets to rebuild each year.

2013 SOS PROJECTS

The 2013 SOS Program consisted of the following projects:

2013 PAVEMENT PATCHING, CHIPSEAL, AND OVERLAY PROJECT – This project performed a double chipseal treatment on 1.3 miles of local streets (see the map on page 6 for the specific streets). Construction began in late August 2013 and was completed in January 2014 at a total cost to the local street fund of \$175,000.



Chip Seal on 2nd Street SE .

2013 LOCAL STREET PAVEMENT RECONSTRUCTION – This project rebuilt the pavement on 0.7 miles of local streets and overlaid 0.1 miles of local streets throughout the City (see the map on page 6 for the specific streets). The project also replaced 0.7 miles of undersized water main; upgraded 0.6 miles of storm drainage line; and replaced approximately 75 feet of damaged sanitary sewer line with utility funds. Construction began in July 2013 and was completed in January 2014 at a total cost to the local street fund of \$2,265,000.



H St NE Before Rebuild

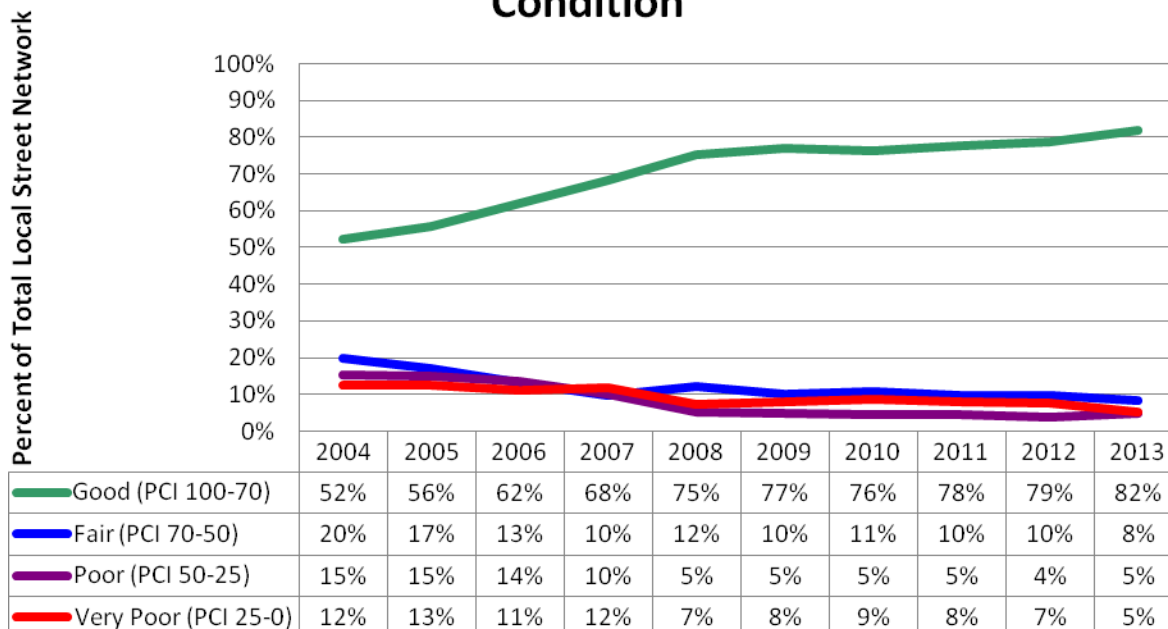


H St NE After Rebuild

IMPROVING PAVEMENT CONDITION OF LOCAL STREETS

Figure 4 below shows how local street conditions have changed over the years since the SOS program was created. The graph indicates that the Pavement Condition Index of local streets has been steadily improving as a result of the SOS Program. The percentage of streets in good condition is increasing and streets in fair, and very poor condition is decreasing. Figure 4 also shows a slight increase in the percentage of poor condition streets. This is due to streets in our network aging and their condition continuing to deteriorate from fair to poor condition. The City anticipates the overall system health will continue to improve in the future especially since the SOS Program has begun to focus on rebuilding streets rated as very poor condition.

Figure 4: History of Local Street Pavement Condition



FUTURE SOS PROJECTS

Approximately \$1,725,000 has been budgeted for the 2014 SOS Program. Additionally, \$500,000 of the total 2013 SOS budget will be carried forward into 2014 to complete the construction of the 2014 Local Street Pavement preservation projects (see map on page 7 for 2014 planned streets). The City plans to continue the strategy of preserving streets in fair to poor condition by overlaying 1.6 miles of roadways. The remaining portion of the funds will be used to rebuild 0.7 miles of roadways.

Future SOS streets (beyond 2014) will be evaluated during the City's annual budgeting process (typically towards the end of each year) when the funds available for the future SOS Programs and the utility work that must be accomplished in conjunction with the SOS Programs are better known.