Howdy Folks
Welcome To Golden
Golden, Colorado

- Population 18,000
- West of Denver at the base of the Rocky Mountains
- Residential community
- Home to the Coors Brewery and the Colorado School of Mines
What is Public Works?

► The development of public infrastructure
  ▪ Capital construction: Water, Wastewater, Drainage/Flood, Streets, etc.

► Maintenance of public infrastructure
  ▪ Pothole repair, Crack sealing, Overlays, Culvert cleaning, Grading etc.

► Response to emergency situations
  ▪ Floods, Blizzards, Water breaks, Etc.
Public Works is often overlooked as Critical Services Providers

- Safe water
- Safe Streets – Traffic – Structural Design
- Emergency Access – Floods, Blizzards
- Health – Sanitation
  - Wastewater treatment
  - Sanitation – trash removal
  - Land fill
When do people notice Public Works?

- When the water goes off
- When the sewer backs up
- Streets don’t get plowed
- Drainage fails causing a flood
- Trash is not picked up
- Traffic Control failure
  - Traffic jam
  - Accidents
The Changes in the Public Works Profession

► Equipment - Three men, one truck, and three shovels
► Mapping, Survey Crew – GPS/GIS
► Standards, Environmental, Water Quality, Flood Protection, Highway Safety
► Respond/React – Manage and Plan
Public Works as Asset Managers

- Focus on the often overlooked role as Asset Managers
- Just reacting is no longer acceptable
- GASB 34 requires it
- Cost
- Remember this is “critical” infrastructure
The Three Important Principles of Asset Management

► Why should we do this?

► How do we get it done?

► What opportunities and benefits are there in the future?
How do we get this done?

First you have to start
It may seem overwhelming, so just begin anywhere.

- I started by measuring the maps we had. The maps were wrong, but we have steadily built from there.

- YOU ARE BETTER DOING SOMETHING THAN DOING NOTHING!!!
Think big – have goals but take small steps

- We measured & mapped - then started investing
- You can always get better, just get started
- Trying to do it all is often so overwhelming that you give up
You must have a goal that your community, council, & employees embrace

► Efficient government
► Better streets
► Lower cost
► Safer conditions
► Free Beer
Champions are critical

- This is not easy – if it was, everyone would do it.
- The day to day stuff gets in the way.
- You must have people who share the vision, and you have to support them!
- Success in one area often opens the door in others.
Results

► Improved planning and budgeting. If we cut the budget, it is intelligent and program based, this is also true if we add service.

► More important if there is a problem we see it coming
History Lesson

In 1988 Golden had hand drawn maps that had been compiled over 40 years that showed the following:

- 32 miles of water lines
- 38 miles of wastewater lines
- No storm water lines
- 136 hydrants
- 268 water main valves
We flew the city and this is what we learned

<table>
<thead>
<tr>
<th>Item</th>
<th>Old Maps</th>
<th>After Flight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water line</td>
<td>32 mi</td>
<td>79 mi</td>
</tr>
<tr>
<td>Sewer</td>
<td>38 mi</td>
<td>72 mi</td>
</tr>
<tr>
<td>Storm water</td>
<td>0 mi</td>
<td>0 mi</td>
</tr>
<tr>
<td>Hydrants</td>
<td>136</td>
<td>487</td>
</tr>
<tr>
<td>Valves</td>
<td>268</td>
<td>1262</td>
</tr>
</tbody>
</table>
The cost of poor inventory

The city had missed 47 miles of water line, it would under fund replacement by about $300,000.
The cost of poor inventory cont.

- Construction inflation has run between 8% and 18% for the past ten years.
- The single deferment of the $300,000 investment in ten years would cost over $780,000.
- This is a cumulative cost for all ten years of nearly $5.26 million.
Street Paving – How much do we need to spend?

- Golden has 240 lane miles
- It will cost $21 million to replace
- Pavement lasts 20 years

SO, We need $1,050,000
Every year – FOREVER!
Annual Paving Investment

-2,050,000

$0
$100,000
$200,000
$300,000
$400,000
$500,000
$600,000
$700,000
$800,000


-1,550,000
-460,000
-40,000
-325,000
-2,050,000

Annual Paving Investment

-2,050,000

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$100,000
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$600,000
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$800,000


-1,550,000
-460,000
-40,000
-325,000
-2,050,000
Pavement Deterioration Curve

- 75% of the time
- 40% quality drop
- 40% drop in quality

$1.00 Here
Will cost $5.00 Here

12% time
Notice also that the HMA streets are in the “good to very good” range for the majority of the life cycle. Again this is due to the efforts of the street department in continuing to spend money on streets in good condition to maintain them in good condition. Many agencies use a “worst first“ approach to maintenance and spend money trying to “catch up”. This strategy does not provide for the long period of high quality found in Golden.
The average OCI for the network was 84 or very good. Notice also that very few streets have an OCI reading of below 70. For many agencies the majority of their streets have a quality of less than 70. Therefore the streets in Golden are in good to very good condition and are being maintained at a high quality level.

Additional information can be found by viewing a detailed (ungrouped) frequency distribution. To further evaluate the condition of Golden’s network, all segments with an OCI of 100 have been removed. This allows the analyst to view data without the bias of newly reconstructed or rehabilitated streets. Figure 1.4 shows the detailed distribution.
In two years we were adding lots of pavement to the critical portion of the curve.
3-Year Pavement Condition Index Comparison

Overall Condition Index

Number of Segments

2005
2008
2010
The Results

► City council allocated 40% more funding over 5 years to avoid higher costs in the future

► Extra funding came from deferral of new projects and replacements that would cost significantly more later. New parks, fire truck are examples
Our Bulgarian Friends
Public investment has led to private investment
In Review

► Vision
► You must have a Goal
► Getting started is the most important thing
► Think big but act in small steps
► It is your responsibility
► Champions are critical
► You need to be a proactive department
What does the future hold?

- Proactive pre-planned routine maintenance
- More effective inspection
- No emergency responses
- Intelligent decision making
Thanks,

Dan Hartman,  Director of Public Works – Golden

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