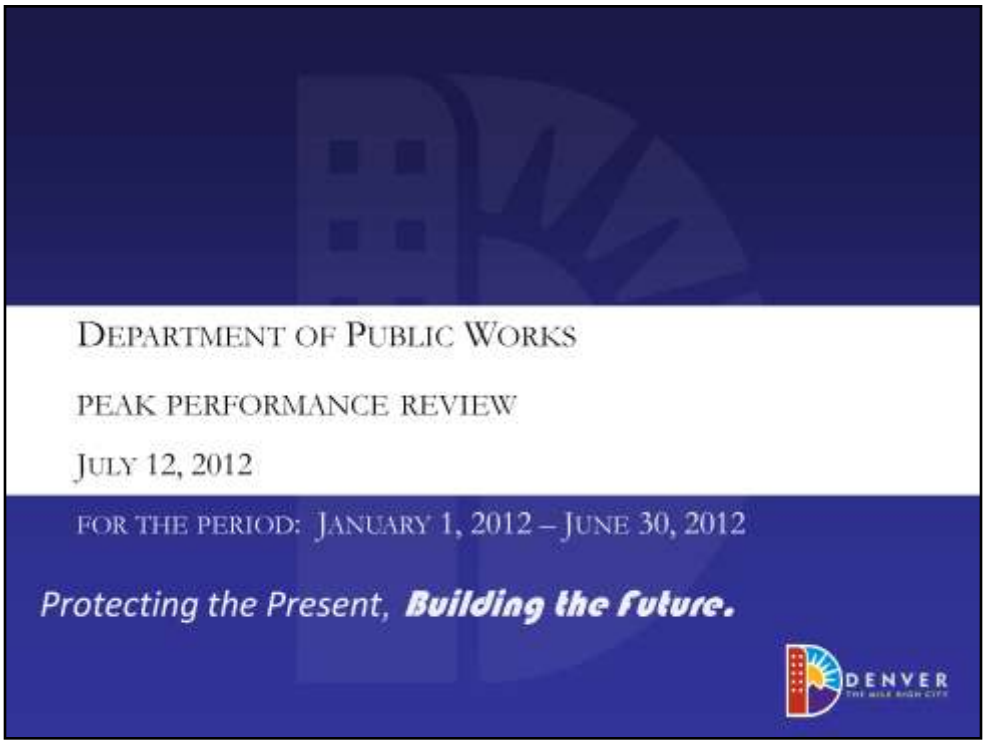


- **The Department of Public Works** is one of the largest departments in the City and County of Denver with over 1100 employees. **We provide a wide range of services** from snow removal and trash collection to designing and managing capital improvement projects in the City.
- Our services are structured and organized into four large divisions including: **1)Policy, Planning, and Sustainability, 2)Operation Services 3) Engineering Services and 4)Finance and Administration**.
- During this presentation I will talk about our vision, mission, strategies, and tactics. I will also talk about our budget and finances. And finally, opportunities for improvement.

Attendees:

Dave Edinger, Chief Performance Officer, Mayor's Office

Beth Machann, Controller, Department of Finance

Nita Henry, Director, Career Service Authority

Brendan Hanlon, Budget Director, Department of Finance

From Public Works:

Jose Cornejo, PW Manager

Lars Williams, Solid Waste

Kelly Duffy, Street Maintenance

Mike Anderson, Capital Projects

Barb Puls, Finance and Administration

Matt Wager, Traffic Engineering

Ernie Ivy, Fleet Management

Mitch Kumar, Capital Projects

Ann Williams, Communications

Rob Duncanson, Right-of-Way Services

George Delaney, Chief Operating Officer

Mike Lutz, Solid Waste

Reza Kazemian, Wastewater

Brian Schat, Capital Projects

Kathren Zacharczyk, Finance and Administration

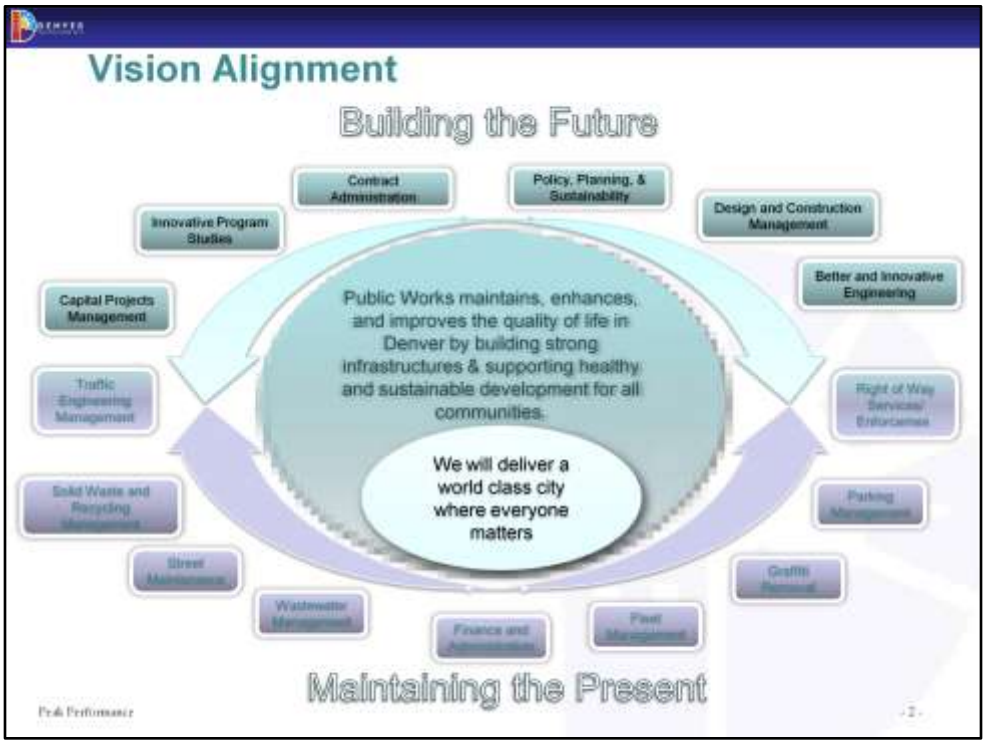
Dionne Williams, Finance and Administration

Peter Baertlein, Capital Projects

Crissy Fanganello, Policy, Planning, and Sustainability

Kim Watanabe, Capital Projects

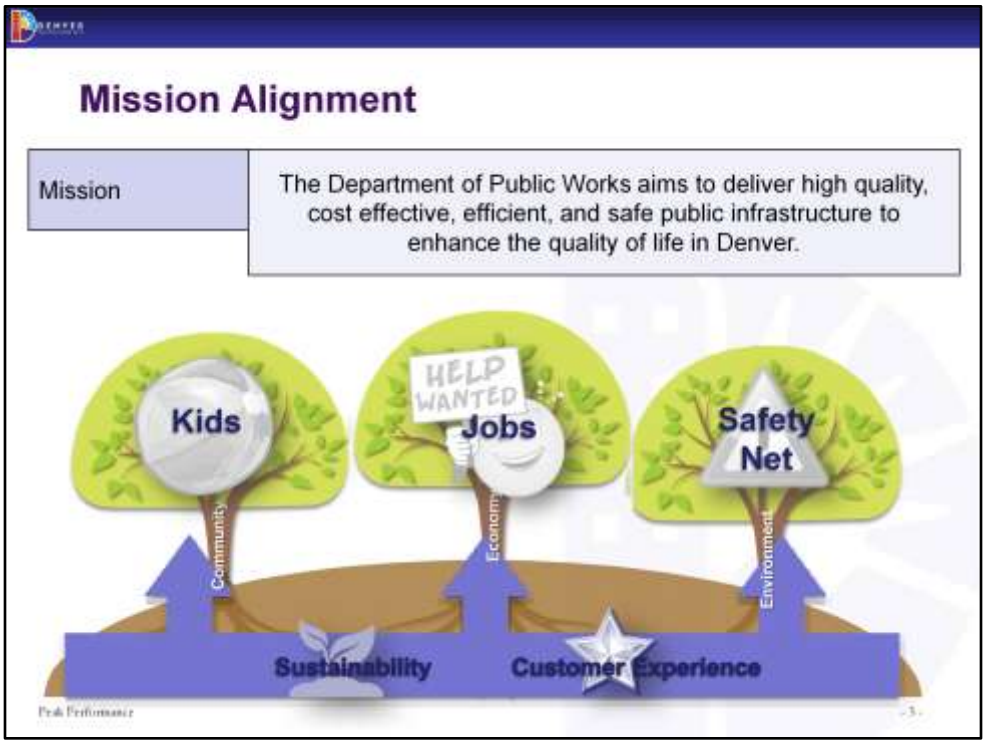
Brandon Lawrence, Finance and Administration



- The first question we asked ourselves during this process was: How does Public Works align with the mayor's vision? How do we "deliver a world class city where everyone matters"..

- A World Class City is built upon maintaining, enhancing and improving the quality of life of its' people by developing a strong public infrastructure for now and the future AND by supporting healthy and sustainable development within its communities.

- Public Works needs to maintain the present infrastructure by providing high quality services in all these areas including
    - Solid waste and recycling
    - Street maintenance
    - Wastewater management
    - Fleet management
    - Graffiti removal and
    - Parking Management
- We also need to plan, design, and build the future infrastructure by managing
    - Capital improvement projects
    - Planning and studies, etc. as evidenced in the top boxes



Mission Alignment

Our mission is to deliver high quality, cost effective, efficient, and safe public infrastructure for our communities including kids; for our economy to create jobs; and for our environment to build a safety net.

Customer Experience: (Star)

- Good customer service is our primary goal. End users are the folks who directly benefit and use the services and infrastructure provided by the City.
- All the Public Works programs aims to improve the quality of life in Denver by allowing daily life to occur without interruption or inconvenience.

Sustainability: (Plant)

- Healthy and sustainable development is the overwhelming challenge we face in the 21st century. This concept means to make a shift from a primary economic development to a more inclusive approach to human development that includes community development, alternative energy solutions, and environmental sustainability.
- For example some of our efforts to reduce green gas emissions and decrease the City's carbon footprint include: transitioning to alternative fuel-powered vehicles, increasing the number of bike trails, enhancing multi-modal transportation opportunities, encouraging recycling and composting, implementation of more than 6,000 solar-powered Smart Meters and the use of efficiency lighting on the streets

Kids: (Beach ball)

- PW provides safe infrastructure and environment that directly benefits children in Denver communities.
- We maintain and design safe sidewalks, streets, intersections, traffic signals, bike paths, etc.
- Our libraries and recreation center are the hubs for children's learning and activities.

Jobs: (Economic Development): (Help Wanted Happy Face)

- We aim to develop a healthy and sustainable infrastructure that opens the door to economic development.
- We create efficient infrastructure that attracts new business and helps to maintain existing businesses.
- And we effectively manage Denver's infrastructure to support businesses to grow. For example by creating turnover in parking spaces, keeping sidewalks free from obstructions, removing unsightly graffiti etc.

Safety: (Safety Symbol)

- Public Works collaborate with other departments to create a healthy environment to enhance safety in all Denver communities.
- Our staff is highly trained to respond to emergency situations to ensure general safety in the City.
- Public health initiatives are among our top safety priorities. Some of these priorities include: storm water and sewage conveyance, removal of solid waste, recycling, reduction of landfill, reduction of carbon footprint and safe alternative travel modes.

Strategies

• In order to meet the 21st century challenges, that is to achieve a healthy and sustainable development for our communities,

we plan to implement three (3) strategies :

Strategy 1: Support and maintain our PRESENT infrastructure

Strategy 2: Design and build the FUTURE infrastructure

Strategy 3: Build bridges with the stakeholders, including partner agencies, business communities, and end users

The Tactics we plan to use are based on several strategic master plans developed by our department.

As you can see for both strategy #1 and #2, these plans need to be completed and implemented.

To achieve these tactics we plan to:

1) Maximize local funds and outside sources
2) Effectively manage contractors, including change orders
3) Maintain capital projects on time and on budget
4) Control cost of operation

For strategy #3, our tactics will include:

1) Facilitate stakeholder meetings
2) Improve customer service, example 311
3) Increase Opinion and Editorial outreach
4) Obtain feedback from the community through citizen's survey

As noted on the previous slide, Strategies 1 and 2
• Have common tactics
• That is to use the existing Strategic Master Plan to maintain and build the City's infrastructure

The first row of boxes represents all the strategic master plans that currently exist, all of which are in different stages of implementation. These include:

- Strategic Transportation Plan
- Strategic Parking Plan
- Solid Waste Management Master Plan
- Storm Drainage Master Plan
- Sanitary sewer Master Plan
- Denver Moves Plan
- Greenprint Denver
- Pavement Management Plan

Under each category you will notice the red and turquoise/blue boxes:

The Red are tactics to efficiently maintain and manage the existing Infrastructure

The turquoise/blue are tactics to maximize investment of City Funds, for example:

- New investment to upgrade infrastructure (Sanitary Sewer plan)
- Increase direct benefits to end-users (Solid Waste plan)
- Incorporate new technologies (Greenprint Denver)

•**FINALLY,** all these tactics cannot work and be cost-effective without:
•Completing the projects on time and on budget
•Maximizing local and outside sources
•Managing contractors' performance and change orders
•And controlling operations costs

Remember, Strategy #3: Build bridges with the stakeholders, including partner agencies, business communities, and end users

Stakeholders are at the center of it all

- Public Works values the ideas, views, and opinions of our partners
- Our partners shape our vision

Build Bridges and Trust

- Public policy and implementation of programs are almost impossible without the healthy participation of the stakeholders
- We should aim to have more co-design and co-ownership of our City projects by creating partnerships
- Time is of the essence to forge these partnerships
- The implementation of all these plans must be equitable throughout the City

The FOLLOWING Slides demonstrate the status of each of the strategic plans within the Department of Public Works.

- The first column describes the desired OUTCOMES
- The second column outlines the METRICS, which represent the factors that measure the outcome
- The Columns in gray list the GOALS and the RESULTS from 2008 to present
- And finally the DOTS indicate if we are meeting/exceeding (GREEN), Trending toward the Goal (YELLOW) or Trending away from the Goal (RED)
- We also have a BLUE dots on some of the slides indicating a NEW METRIC

This current slide summarizes the Strategic Transportation Plan

This plan was developed in 2008 with the idea of reducing our dependency on cars and providing multi-modal transportation options to our community including mass transit, bicycles, pedestrian trails, and cars. This plan deviates from the traditional idea of moving cars to moving people.

<u>The Outcomes include:</u>

- Increase multi-modal travel options
- Maintain existing infrastructure
- Manage congestion

<u>Metrics:</u>

- Bike and Pedestrian modes shares are slightly trending upward. The goal is to increase bike and walking commute to 15%. Currently 4% of residents walk to work and only 2% bike to work . Denver Moves will address this further. (YELLOW DOT)
- Public Transportation Commute Mode Share fell since 2008. (RED DOT)
    - In part, this can be attributed to low gas prices during this timeframe and rises in unemployment that leads to less public transportation demand. 2011 figures are forthcoming with the release of American Community Survey data.
- Pavement Condition Index is failing (RED dot) In part this is due to not keeping pace with the 12-year paving cycle. We used to pave 8%/year, now we average 4%/year due to budget cuts.

We are on target (Green dot) with re-timing the traffic signals

•Regional Goal: Retime 150 signals per year

- •One retimed traffic signal:
    - •Reduces 3lbs of vehicle emissions/day
    - •Reduces fuel consumption by 10 gallons/day
    - •Reduces time spent in traffic by 20 hours/day

2012 Strategies & Tactics

6-year Pavement Management Plan

Outcomes	Metrics	Goal	2008	2009	2010	2011	2012 (Projected)	
Use economy of scale to minimize mobilizations across the city	Cost of in-house 2" mill and overlay compared to metro area	<95%	n/a	n/a	n/a	n/a	93%	
	Asphalt Plant % Savings over outside vendor	Maintain/ Increase	27%	14%	7%	10%	10%	
Pave streets at the optimum time to get the best life extension	% Streets in fair or better condition	80%	85%	--	81%	78%	76%	
	% of Network Paved Annually	8%	4.4%	3.6%	5.0%	5.2%	5.0%	
	Street Maintenance: Average Pot Hole Request Response Time (days)	Maintain/ Decrease	n/a	0.90	1.00	1.00	1.00	

Peak Performance = Trending Away From Goal = Trending Toward Goal = Meeting/exceeding Goal = New Metric

The City and County of Denver maintains approximately 1900 center line miles of roadway. This 6 year Pavement Management Plan is used to establish operational and capital budget to maintain our streets. Public Works uses software to manage the street inventory and monitor the condition of the streets. We need approximately 16 million dollars annually for street re-surfacing and reconstruction maintenance.

The outcomes of the 6-Year Pavement Management Plan include:

- Use economy of scale to maximize efficiency in the pavement projects
- Pave streets in a timely manner to get the best life extension

Metrics:

The Cost for Public Works to apply 2" mill and overlay AS WELL AS the savings by using our own ASPHALT PLANT is working (GREEN DOTS).

The two areas declining include the Percent of Streets in Fair or Better Condition and the required Annual Maintenance (RED). Our goal is to keep 80% of our streets in fair or better condition. To accomplish our goal is to do 8% of the streets per year.

•Due to budgetary cuts in the last several years the overall condition of the network is rapidly declining.

Average Pot Hole Request Response Time is meeting goals

• Street Maintenance crews are highly effective at responding to pot hole requests

• Many pot holes are filled before the request is received by staff.

Denver Moves is the continuation of over 30 years of planning to improve and expand our biking and walking network (non-motorized network). Denver Moves aims to add 270 miles of this network to the existing 172 miles.

The Outcomes for Denver Moves include:

•Increased access to bicycle routes close to home

•Increases in bicycle commute mode share

•Balances the needs for all users, by including age and ability groups

- •80% of our network will be dedicated to High and Moderate Ease of Use (Ease of use is a safety concept based on the degree of separation from motorized traffic and perceived level of comfort by the user)
- •311 miles will be dedicated to Bicycle use only and 131 miles to multi-use trails and sidewalks
- •Total finished network to be 442 miles of multi-use and bicycle facilities
- •The estimated total cost for all these improvement is approximately 119 million dollars (2011)

<u>Metrics:</u>

All the metrics are trending toward the goal including

- Bike Facilities Completion %
  - • Indicates the status of the goal of adding 311 new miles of various bike trails

- % of Households within ¼ Mile of High Ease of Use Facility
  - This means a 5 minute walk to the facility OR a 2 minute bicycle ride
  - In 2012, 49% of households were within this range

- Ease of Use Breakdown
  - •Indicates the current construction trend in achieving High, Medium, and Low Ease of Use trails in accordance with phase plan.

Roadways alone account for an average of 30% of any city's land use. Parking adds to the overall percentage of city land that is dedicated exclusively to automobiles. In some cities it could take more space than all other land uses combined. The Strategic Parking Plan is a document that helps to manage parking as an asset to understand supply and demand, user behavior, and compliance with City ordinances.

The outcome from Strategic Parking Plan includes:

- The incorporation of software applications and technology to better manage PARKING as a asset
- Stakeholder inputs into management plans

<u>Metrics:</u>

- Total # of Parking Citations Per Year is trending away from the goal (RED)
  - Increases indicated that the delicate balance of rates, time restrictions, and penalties may not be achieving the desired effect.
  - Increases in staff efficiencies has had some effect on citation increases.

- Street Sweeping Violations is trending toward the goal (Yellow)
  - Significant increases in compliance were experienced due to increased fines from 2010 to 2011.
  - 2012 YTD figure is indicative of one month of data.
  - Projected figure is expected to be a decrease from 2011.

- Feet of Curb Lane Managed by Valet Parking Program (Yellow)
  - Program began in 2010 with the adoption of Valet ordinance to monitor safety and improve customer experience.
  - Only gradual increases expected as new Valet operations are identified and permitted.

- Neighborhood /Area Parking Management Studies is progressing toward goal (Yellow)
  - Studies provide opportunities for stakeholders to provide input into parking management goals
  - Studies seek to balance business/customer, employer/employee, commuters, and visitor needs

2012 Strategies & Tactics

Solid Waste Master Plan

Outcomes	Metrics	Goal	2008	2009	2010	2011	2012 (Projected)	
Increase the waste diversion rate	Recycling as a percentage of waste stream	30% by 2020	11.30%	11.60%	12.92%	13.10%	13.10%	
Expand the program proportional to population growth	Recycling Subscription Rate	80%	n/a	58%	62%	67%	68%	
Achieve efficiency and cost containment	Disposal Cost per Ton (Operational expense ÷ Tons collected) 2008 Adj.	Maintain/ Decrease	$91.03	$93.43	$84.35	$85.41	$88.50 (Budgeted)	

= Trending Away From Goal = Trending Toward Goal = Meeting/exceeding Goal = New Metric

This master plan was introduced in 2010 with the primary goal of reducing the total landfilled waste by 30% to achieve the goal by 2020.

The Outcomes for the Solid Waste Management Master Plan include:

- Increase the waste diversion rate, through increased recycling and composting
- Expansion of the program proportional to population growth
- Achieve efficiency and cost effectiveness

<u>The Metrics measures indicate that:</u>

Recycling as % of Waste Stream is trending toward the goal (Yellow Dot)

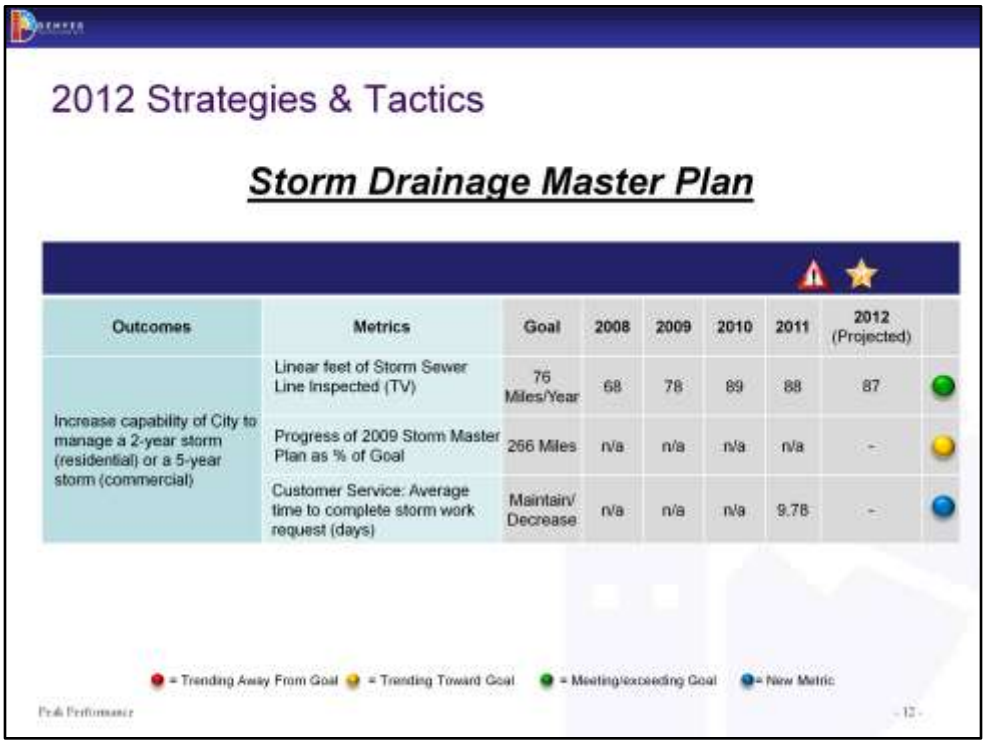
- This has slowly increased due to increased recycling subscriptions, changes in acceptable recyclable materials, outreach and education.
- 30 % Goal by 2020 may not be attainable at current rate – may require policy changes.

Recycling Subscription Rate has been increasing each year (Yellow Dot)

- Year 2004 subscription rate was 51%
- This indicates success in promoting routine recycling
- Rises in the Subscription Rate along with increases in households served demonstrates that recycling is expanding at a rate faster than households served

Disposal Cost Per Ton (Adjusted) is trending toward goal (YELLOW Dot)

- This represents operational costs including tip fees, labor, etc per ton collected
- The 2012 figure is based upon budgeted not actual costs
- Disposal cost per ton may be reduced as a result of outreach initiative regarding lawn clippings and increases in recycling.



This master plan was originally completed in 2005 with the expectation of revising it every five years. The plan seeks to maximize the level of public safety and property, minimize negative environmental impact, and increase water quality. Total cost of all Master Plan projects exceed $1 Billion. City and County of Denver has

The outcome for Storm Drainage Master Plan includes;

- To remove flood hazards and standing water away from people
- To safely convey damaging storm waters away from structures

Metrics:

- Linear feet of Storm Sewer Line Inspected has meet or exceeded goal (Green Dot)
    - System cleaned every 18-24 months

- The Progress of 2009 Storm Master Plan is trending toward the goal (YELLOW DOT)
    - Progress is highly sensitive to economic fluctuations due to capital funds required.
    - 266 miles is represented in Master plan
    - Metrics for underground infrastructure have not been readily available; GIS analysis is forthcoming

- The BLUE DOT represent a New Metric which is Customer Service. This goal is in progress.
    - This metric includes account reviews to determine accurate storm water billing.

The Sanitary Sewer Master Plan provides for a prioritized approach to address capacity needs and ongoing maintenance, environmental goals, and public health to the year 2050. This is a living document that will be modified based on new GIS data and modeling methods.

The outcome for the Sanitary Sewer Master Plan includes:

•To maintain the existing sewer system

- •By removing dangerous sewage away from people and keeps it from entering an open environment and
- •By maintaining the system to prevent backups and keep the system ready to accommodate new development

<u>Metrics:</u>

- Linear feet of Sanitary Sewer Line Inspected is on target (Green dot)
  - Entire system is televised every 5-7 years at the 303 mile/year rate
  - Television inspection finds infiltration and blockages
  - Identifies problem areas and informs the preventative maintenance process
  - Finds problems before they become bigger problems

- Lineal Feet of Replacement or Rehabilitation is trending toward the goal (YELLOW dot)
  - Demonstrates maintenance output levels
  - Extends system life and increases capacity in response to development and density changes

- Average Response Time to repair plugged main in minutes is also trending toward the goal (YELLOW dot)
  - Response time influenced by personnel and equipment availability, policy, and travel times
  - Weekend response has a slightly lower expectation due to need for call-back

- Customer Service metric is relatively new and is in progress (Blue Dot)

Greenprint Denver was launched in 2006 as an action agenda for sustainable development for the City and County of Denver. PUBLIC WORKS collaborated with their efforts to meet its goals and strategies.

The Outcomes include:

- Improve water quality of South Platte River
- Increase multi-modal travel options
- Increase "Green Fleet"

<u>Metrics:</u>

- Street Sweeping is on target and working well (Green Dot)
  - Capacity is limited to the number of street sweepers and equipment operators.
  - Figures represent the amounts of particulates, trash, and other debris removed from water ways and air.

- Private Alleys Pavement is trending toward the goal (YELLOW Dot)
  - New Program expected to reduce airborne and waterborne particulate matter

- Fleet Vehicles is also trending toward the goal (YELLOW Dot)
  - All 700 diesel engines are operating on Biodiesel
  - In 2013, several diesel trash trucks will be replaced with CNG trash trucks

2012 Strategies & Tactics

MISSION LEVEL METRICS

» *Cost Effectiveness*

Outcomes	Metrics	Goal	2008	2009	2010	2011	2012 (Projected)	
Complete capital projects on time and on budget	Schedule Performance Index	0.90 or above	--	--	--	0.83	0.93	
Maximize the value of projects through the formal hard bid process	Hard bid cost avoidance	Maintain	--	--	--	12.79%	4.51% (YTD)	
Manage change orders as a means to control costs	Change Orders as % of original contracts	Info Only	n/a	9.93%	11.56%	4.86%	--	
Control Costs of Operations	Cost Per Capita - All Funds (2008 Adjusted) Population (Change from 2008)	Maintain	$290.02 --	$279.91 2%	$270.81 4%	$282.10 5%	$302.93 7%	

= Trending Away From Goal = Trending Toward Goal = Meeting/exceeding Goal = New Metric

Peak Performance - 15 -

These Mission Level Metrics provide a sense of how Public Works is being effective at controlling costs. These metrics measure operations and the capital improvements functions.

Capital improvement provides the backbone for new projects that are required to both maintain and expand the City's infrastructure. While the Operations function seeks to provide the day to day services that enforce regulations or perform the daily activities that keep Denver healthy and vibrant.

Metrics:

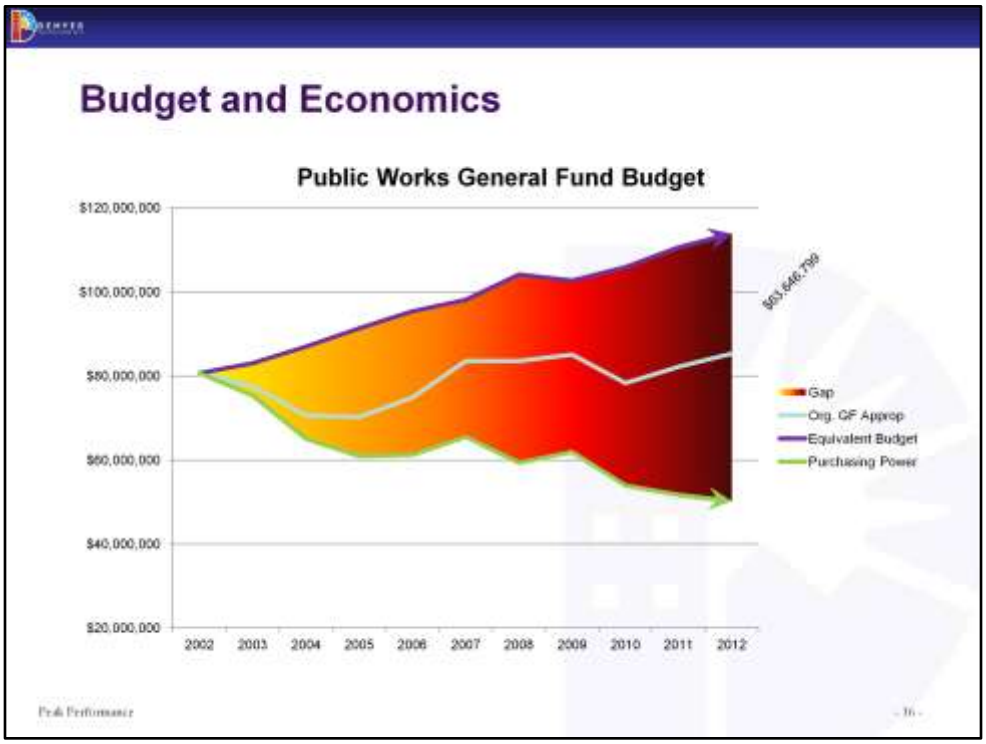
- Schedule Performance Index has met the goal (Blue Dot)
  - •Indicates the overall health of the capital projects portfolio
  - •Takes costs and schedule into account
  - •Delays and unexpected costs have an effect on the index
  - • An index score of 1.00 or higher indicates on time and on budget
  - • 1.00 is the ultimate goal; however, 1.00 is almost unattainable without manipulating project timelines – delays are often unavoidable for example weather, labor strike, etc.

- Hard bid cost avoidance is trending toward the goal (Blue Dot)
  - •Indicates the initial savings collected versus the market cost of projects
  - •This is calculated by finding the sum of the average bids on all projects and subtracting the sum of all accepted bids
  - • This is a standardized measure used by National Association of State Procurement Officers
  - •2012 YTD reflects the savings of the annual programs – this can be attributed to better understanding of regular occurring costs.

- Change Orders as % of Original Contracts is a new goal in progress (Blue Dot)
  - •For information Only – Metric will be further developed to differentiate the costs of change orders that are beneficial to the City versus those that are detrimental
  - •Current figures run close to industry standards
  - •The figures in the chart above are sorted by the year the project started. PW is in the process of working on how to better track change orders.

•Cost Per Capita (Yellow)

- •This metric represents the cost of delivering Public Works' core programs per capita
- •Even though the population has increased by 7% since 2008, we have maintained our operational costs to within 5% of the 2008 baseline and has actually operated almost 7% ***below*** the 2008 baseline.
- •2012 is a projected figure– the year-end actual will determine if Public Works is holding this figure steady.



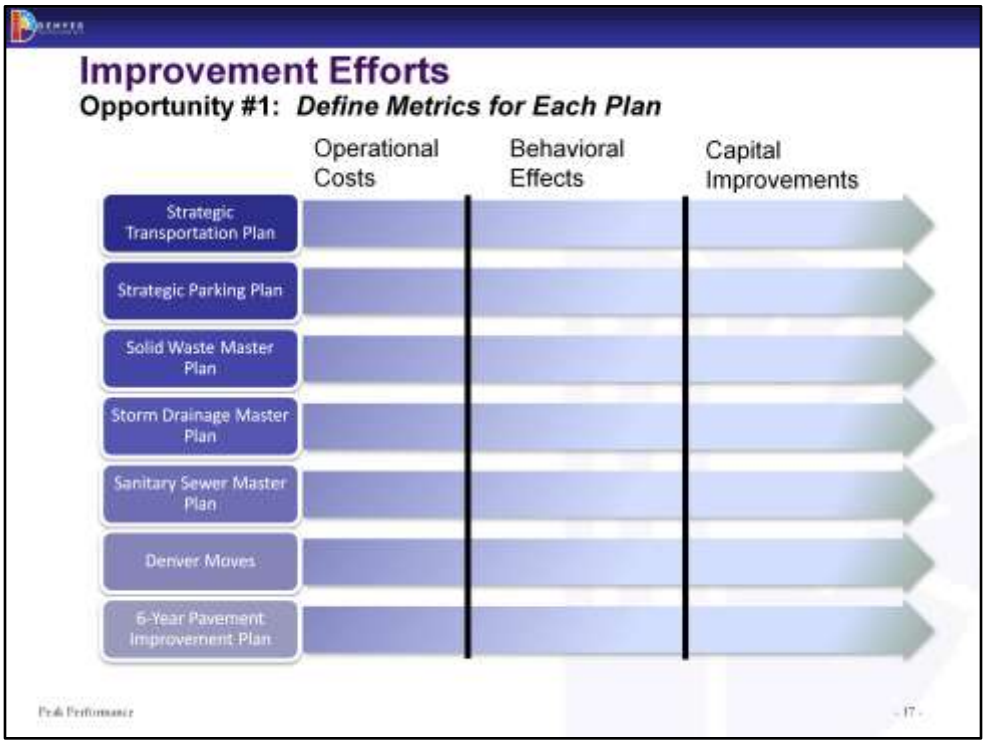
This slide shows the critical situation the Public Works budget faces based in the downturn in our economy since 2002.

- The lower line in green on this chart shows the lost of purchasing power of the General Fund budget since 2002
- The middle line in light blue is the actual budget appropriations since 2002 (The appropriations have NOT gone up very much in 10 years)
- The upper line in purple represents the Annual Budget if budget were to follow inflation since 2002

• The Gap in red represents the shortfall of the combined effect of loss of purchasing power and actual budget

- Current General Fund budget has lost 41% of its purchasing power over last decade.
- In other words, Public Works has been doing more with less

*Municipal Cost Index used in calculations



Mission impact

- To achieve the mission of Public Works to deliver high quality, cost effective, efficient and safe public infrastructure, it is important to assure that we have the correct metric to measure the progress of each strategic plan listed in this slide
- As we examine these plans, we will consider the operational costs, the behavioral effects, and capital improvements
- We will also evaluate what data is available to inform improvement processes and decision-making

Timing

- Our goal is to start reviewing these strategic plans immediately, and bring the key players within each department to the table. The actual schedule will be presented next quarter.

Cost/benefit analysis

- We hope to analyze the operation costs within each division and find ways to maximize our resources to produce positive results to benefit the City

Methodology

- We will determine which plan should take priority based on available data
- Then we will assess the implementation stage of each strategy within each plan and refine the parameters of each metric
- Finally we will review each plan from three points of view: the operational, the behavioral, and the physical
    - Operational Costs – to monitor how we spend our budget
    - Behavioral Effects – to determine how people use the infrastructure and if the plans are creating the desired outcomes
    - Capital Improvements – to determine if we are building infrastructure that is meeting community needs and performing as designed

    - A fourth category of metric will provide comparative analysis of Denver against other cities, where applicable.

Resource requirements

- Subject matter experts from each department will be consulted to accomplish the above-mentioned goals
- Generating data for metrics may require cooperation from other City departments - for example the Office of Economic Development, Financing, etc.

In response to Audit findings, Public Works is committed to make necessary changes to the process for Prequalification, Selection, and Management of Consultants and Contractors

This process of improvements will include:

• creating metrics to monitor quality, efficiency, and past performance

• tracking and coding change orders to determine the value added ,origin ,rationale

•conducting evaluation of work performed and post-work review

Mission impact

- Greater transparency of consultant/contractor selection process
- Enhanced data to support contractor selection decisions
- Greater control and scrutiny over change orders
- Project Management accountability
- Enhanced internal communication

Timing

- Contractor Selection and Performance enhancements to occur before end of year.
- Change orders: Manual process in progress; automated process in development

Cost/benefit analysis

- Minimal costs; expected to provide enhanced transparency

Methodology

- The current process review revealed opportunities for additional data collection
- We will be requiring specific rationale for Change Orders
- Next steps will mandate consistent and improved reporting processes

Resource requirements

- Staff time and training

Next review

- **Next Performance Review: October 2012**
- **Strategies and Tactics of focus for next meeting**
  - Metrics for Strategic Transportation Plan
  - Contractor/Consultant Pre-qualification, Selection and Performance
- **Update on projects and opportunities**
  - Updates on existing metrics