Asset Management & Achieving Efficiencies

Dennis G. Kolar, PE
Managing Director
Road Commission for Oakland County

ROAD COMMISSION for OAKLAND COUNTY

RCOC:

- ⇨ Largest county road system in state
  - 2,700-plus miles of roads
- ⇨ $101 million budget (FY 2012)
- ⇨ Nearly 800 miles = still gravel
- ⇨ RCOC maintains:
  - 230 miles of state highways
  - 90% of all traffic signals (1,500)
  - 150,000+ road signs

Asset Management

- We strongly support this scientific approach to road project & treatment selection.
- We have done asset management since the early 1980s -- long before it was mandated.
- This data has long been used for project and treatment selection.
- The problem: We know what roads need what treatments – we don't have the money to implement all of those treatments.

Efficiencies

- Road funding has been inadequate for 50 years.

Per Capita State & Local Expenditures (Michigan's Rank in the Nation)

Expenditures	1964	1974	1984	1988	1992	2009
Health	5	8	9	3	12	13
Education	11	7	10	7	11	9
Welfare	31	5	3	8	17	32
Roads	43	44	42	44	49	44

Source: U.S. Census Bureau

- We've been finding ways to cut costs & save money for so long, it's part of our DNA.

How we've cut costs & saved money:

- Privatization
- Benefit restructuring
- Technology
- Staff reductions
- Cross-training staff
- Reorganized departments
- Etc.

Privatization

- We continually evaluate operations: Can we do more efficiently than private sector?
- Where there is a strong business case, we have privatized.

Activities Privatized

Fully Privatized:

- All road construction
- Curb Sweeping
- Pavement Marking (Legends & Striping)
- Large Tree Removal
- Simple Asphalt Resurfacing
- Shoulder Paving
- Concrete Repair
- Joint and Crack Sealing
- Slope Mowing on State Highways
- Bridge Inspection
- Guardrail Repair on State Highways
- Carpet Cleaning & Repair
- Vehicle Windshield Replacements
- Vehicle Body Work
- Oil Change -- Autos/Light-Duty Trucks

Partially Privatized

- Light Truck & Auto Repair
- Boulevard Mowing
- Bridge Repair
- Base Repair
- Engineering (Road & Bridge Design)
- Signal Design
- Signal Installation / Modernization
- Heavy Equipment & Truck Repair
- Soil and Material Testing
- Gravel Spreading
- Larger Road Maintenance Project (culvert replacements, dredging, etc.)
- Boom Inspections & Repairs
- Building Maintenance
- New Dump Truck Outfitting
- Building Janitorial Services
- Building Windows Repair/Replacement
- PM Service, Large Trucks
- Building HVAC and Plumbing Work
- Storm sewer clean-out
- Sign fabrication

Activities Privatized

Fully Privatized:

- **All road construction**
- Curb Sweeping
- **Pavement Marking (Legends & Striping)**
- Large Tree Removal
- Simple Asphalt Resurfacing
- Shoulder Paving
- Concrete Repair
- Joint and Crack Sealing
- Slope Mowing on State Highways
- Bridge Inspection
- Guardrail Repair on State Highways
- Carpet Cleaning & Repair
- Vehicle Windshield Replacements
- Vehicle Body Work
- Oil Change -- Autos/Light-Duty Trucks

Partially Privatized

- Light Truck & Auto Repair
- Boulevard Mowing
- Bridge Repair
- Base Repair
- **Engineering (Road & Bridge Design)**
- Signal Design
- Signal Installation / Modernization
- Heavy Equipment & Truck Repair
- Soil and Material Testing
- Gravel Spreading
- Boom Inspections & Repairs
- Building Maintenance
- New Dump Truck Outfitting
- Building Janitorial Services
- Building Window Repair/Replacement
- PM Service, Large Trucks
- Building HVAC and Plumbing Work
- Storm sewer clean-out
- Sign fabrication
- **Larger Road Maintenance Projects (culvert replacements, dredging, etc.)**

Benefit Restructuring

- RCOC Board dramatically restructured retiree benefits
- Established "hybrid" plan for non-represented employees – includes both pension & defined-contribution elements
- This provided far greater savings than eliminating pension plan & replacing with only defined-contribution plan.

Comparison of new & old RCOC retirement plans

Defined-benefit (pension) portion:

Plan	Old Plan	New Hybrid
Age/years eligibility:	55/25 or 60/8	62/10
Vesting:	8 years	10 years
Factor:	2.25%	1.5%
Employer Contribution:	Approx. 15%	Approx. 4%
Employee Contribution:	0%	6%

Defined-contribution portion:

- Employer match: Up to 1% of employee contribution
- Full vesting only after 4 years of service

Comparison: Defined Contribution vs. Hybrid

	Defined Contribution	Hybrid
Savings in 1st year	None -- increased costs of $1 million	$121,000
Cumulative savings after 18 years	$7 million	$35 million
No. of years before generates savings	9	0

Other Benefit Changes

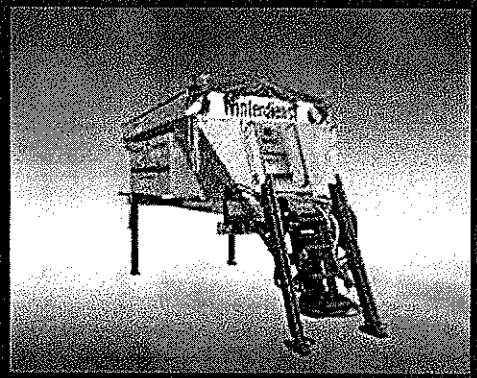
- Eliminated retiree health care for new hires.
- Replaced with health-care savings account.
- Means no retirement health care costs for agency for these employees.
- Have complied with PA 152 for non-rep employees.
- Even before PA 152, RCOC was moving in this direction -- employee health-care contributions had been increasing.
- Will enact for union employees as contracts expire.

Technology

- RCOC was one of the first local road agencies in US to introduce "adaptive" traffic signals – FAST-TRAC system.
- These detect traffic present in all directions and continually adjust signal timing to most efficiently handle that traffic.
- Proven to improve traffic flow and safety (independent studies)
- RCOC has second-largest system in U.S.

Other Technologies

- All RCOC snowplows/salt trucks equipped with Automated Vehicle Location system
- Managers in garage can look at computer map and see:
  - Where all trucks are
  - What they are doing
  - Air and pavement temps
  - Where they have been, when



- Our system was one of first and largest in nation.
- We're adding E-Poke high-tech units
  - Spread salt over 3 lanes – improving efficiency
  - Better able to mix liquid brine with salt as it leaves truck
  - Reduces salt usage – saves money

Other Technologies Continued

- RCOC is one of the only local agencies working with Federal Hwy Admin and auto companies on "Connected-Vehicle" technology.
- This allows cars to talk to each other and to the infrastructure.
- Will provide improved safety & mobility – A new paradigm: Prevent accidents from happening rather than seeking to reduce severity.
- Largest federal test bed is in Oakland County.
- FAST-TRAC collects data suitable for connected vehicle.

Other Technologies Continued

- High-tech tools used to enhance project design & efficiency
- Latest Autocad software used for project design
- High-tech survey equipment -- resulted in reducing survey crews from 3 people to 2

RCOC Staff Reductions

- 2007: 556
- 2012: 405

- 1974: 548
- 1962: 425
  - 1962:
    - 1/2 the population
    - far fewer lane miles
    - 1/5 the VMT
    - 1/3 the signs
    - 1/4 the traffic signals
    - Few freeways had been built

Other Innovations

- RCOC brine/chloride program

Other Innovations

- RCOC brine/chloride program
- Highest concentration of roundabouts in state
- One of the earliest users of LEDs in signals:
  - 80% energy cost savings,
  - 10-year bulb life
- Using free RAP from contractors:

  Saved $750k over 3 years
- Latest project technologies/techniques
  - "White topping"
  - Warm-mix asphalt
  - Cold in-place recycling
  - "Bridge in a backpack"

Resource Sharing

- Winter & Summer Maintenance (communities doing some work)
- Maintaining traffic signals for most cities/villages
- Bid sharing
- Materials purchasing (sharing with CVTs)
- Sharing staff trainers (equipment and electrical) with CVTs
- Fuel
- Maintaining MDOT system for state

QUESTIONS?