



For help accessing information in this document,
please [contact 311](#).

NOTE REGARDING NEXT STEPS AND IMPLEMENTATION

This Service Efficiency Study provides advice and recommendations to the City Manager and was conducted in consultation with the Division. The Study identifies actions and directions that could result in more efficient and effective service delivery, organizational and operational arrangements and associated savings.

The City Manager will work closely with senior management to determine which of the actions are feasible and can be implemented, implementation methods and timeframe and estimated savings. In some cases, further study may be required; in other cases the actions may not be deemed feasible. Implementation will be conducted using various methods and may be reported through annual operating budget processes or in a report to Council or an applicable Board, where specific authorities are necessary. In all cases, implementation will comply with collective agreements, human resource policies and legal obligations.

This study involves multiple City divisions and several major agencies. Preliminary estimated savings have been identified in the study by year where possible. The opportunities identified for estimated potential savings are highly dependent on the viability of these actions as determined by senior management, timeframes, and other implementation considerations such as sequenced action steps and phasing over several years.

City of Toronto – Fleet Services

Service Efficiency Study

Final Report

****Advice & Recommendations to the City Manager****

September 19, 2011

David Berger
Mike Croza
John Eaton
Darryl Nelson
Derek Lobban
Liuba Mamonova



Agenda

- Statement of Purpose
- Major Tasks Completed
- Findings
- Conclusions
- Key Improvement Opportunities
- Summary of Savings and Reallocated Costs
- Roadmap

****Advice & Recommendations to the City Manager****

Statement of Purpose (1)

- “identify and supply actionable recommendations that will provide the maximum of service efficiency savings in the shortest period of time”
- Areas to examine
 - Business process and work methods streamlining
 - Organizational restructuring
 - Outsourcing
 - Automation
 - Shared services
 - Service innovation
- Primary functions under study
 - Fleet management (ie, acquisition, maintenance, disposal & vehicle safety)
 - Fuel management (ie, acquisition & distribution)

****Advice & Recommendations to the City Manager****

Statement of Purpose (2)

- Major cost-driver areas
 - Parts costs
 - Labour costs
 - Fuel costs
 - Procurement standards/costs
 - Use of vehicles and equipment for the purposes intended
- City areas under review
 - The Fleet Services Division itself
 - Clients covered by Service Level Agreements
 - Other major divisions operating vehicle and equipment fleets (e.g. Emergency Medical Services and, Fire Services)
 - Other City Agencies (non-revenue fleets only, e.g. not TTC rolling stock)

****Advice & Recommendations to the City Manager****

Major Tasks Completed (1)

Document Perusal and Interviews

- Reviewed internal/external reports, organization charts, SLA's, contracts, etc.
- Collected & analyzed detailed reports including Police, Fire, EMS, and TTC
- Conducted numerous interviews including
 - Senior management
 - City Manager's Office
 - FS management
 - FS garage staff
 - PMMD management
 - (Potential) customer Departments (Transportation, PF&R, SWM, Water, EMS, TFS)
 - (Potential) customer Agencies (Arenas, Library, TPS, Parking, TTC, Zoo, Exhibition)
 - NAPA rep
 - FS Asset Procurement Manager
 - FS Fuel Management staff
 - PMMD Goods and Services Manager

****Advice & Recommendations to the City Manager****

Major Tasks Completed (2)

Tours and Work Measurement Activities

- Conducted tours of five FS sites (ie, 843 Eastern, 433 Eastern, Ellesmere, Old Eglinton, Finch)
- Conducted tours of (potential) customer sites (ie, Zoo, TPS, Exhibition)
- Conducted tours of major agency sites including
 - 3 Police garages
 - 3 Fire garages
 - 2 TTC garages
 - 1 EMS garage
- Trained 2 work sampling analysts & conducted work sampling at Ellesmere
- Conducted activity-based survey of all Corporate Fleet Services garage staff

****Advice & Recommendations to the City Manager****

Major Tasks Completed (3)

Data Analysis and Reporting

- Completed in-class and on-site process improvement workshops with Corporate Fleet Services
- Reviewed parts warranty recovery process
- Reviewed NAPA pricing model to better understand value proposition
- Reviewed new parts contract RFP
- Compared FS and Toronto Zoo vehicle specs
- Presented draft reports to Steering Committee for Checkpoints #1 & 2
- Reviewed all draft reports in detail with Corporate Fleet Services management
- Reviewed major findings and final recommendations with Fleet Services, TFS, EMS, TPS, and TTC
- Presented draft final report with Corporate Fleet Services management
- Presented draft final report to Steering Committee

****Advice & Recommendations to the City Manager****

Findings –

1. Based on Citywide Data Analysis

****Advice & Recommendations to the City Manager****

Findings – What's Working Well

- Toronto Fleet Services has a reputation amongst Fleet Managers at cities across Canada, as a well-run operation that has gone through years of steady improvement
- Positive feedback from FS customer interviews around quality of work, attitude and improvement trends
- Director of Fleet Services and fleet managers across the City have made steady progress in meeting on a regular basis (ie, at least quarterly) to share knowledge, develop cooperative programs (eg, fuel procurement), and participate in opportunities for improvement
- There is excess capacity in the many garages across the City

****Advice & Recommendations to the City Manager****

Findings – Consolidation Opportunity (1)

- 12 City Departments & Agencies with vehicles and equipment studied re consolidation and shared service opportunities
- Consolidation opportunities
- 7 out of 12 have their own garages for repair of vehicles and equipment
- 7 out of 12 have their own parts procurement contracts & practices
- 1 out of 12 does not participate in City-wide fuel procurement program
- 5 out of 12 do not use Fleet Services (FS) for vehicle acquisition or lifecycle management
- 7 out of 12 use the same computerized maintenance management system (ie, M5); other 5 areas use all different systems
- See summary chart next page showing
 - Shaded green – consolidated/sharing with FS
 - Shaded yellow – some consolidation/sharing with FS
 - Shaded red – minimal or no consolidation/sharing with FS

****Advice & Recommendations to the City Manager****

Findings – Consolidation Opportunity (2)

Group	Repairs (Own or Fleet Services)	Notes	Parts Proc'mnt (Own or Fleet Services)	Notes	Fuel Proc'mnt (Own or Fleet Services)	Notes	Vehicle Acquisition (Own or Fleet Services)	Notes	Vehicle Lifecycle Mgmt (Own or Fleet Services)	Notes	M5, Other	Notes	Garages (Own or Fleet Services)	Notes
Exhibition Place	Own		Own	EP	Fleet		Fleet		Fleet		other		Own	
Toronto Police Service	Own		Own		Fleet		Own		Own		RTA		Own	
Toronto Public Library	Fleet		Fleet		Fleet		Fleet		Fleet		M5		Fleet	
Toronto Transit Non-Rev	Own		Own	TP	Fleet		Own	TA	Own		IFS		Own	
Toronto Zoo	Own		Own		Fleet		Mixed	ZA	Mixed		other		Own	
Toronto Water	Fleet		Fleet		Fleet		Fleet		Fleet		M5, Invensys	WM5	Fleet	
Emergency Medical Services	Own	MR	Own	MP	Fleet		Own		Own		M5	MM5	Own	
Toronto Fire Services	Own	FR1, FR2	Own	FP	Fleet		Own		Own		M5		Own	
Transportation Services	Fleet	pR	Fleet	pP	Fleet		Fleet		Fleet		M5	pM5	Fleet	
Parks, Forestry, Recreation	Fleet	PFRR	Fleet	PFRP	Fleet		Fleet		Fleet		M5	PFRM5	Fleet	
Solid Waste Management	Fleet	WMR	Fleet	WMP	Fleet	WMF	Fleet		Fleet		M5, Invensys	WMM5	Fleet	WMG
Toronto Parking Authority	Own	PR	Own		Own		Own		Own		other	PM5	Own	

Explanation of notations under each “Notes” column were provided

****Advice & Recommendations to the City Manager****

Findings – Consolidation Opportunity (3)

- Opportunities exist for further consolidation and sharing in the short to longer term
- Focus on larger fleets for major consolidation, where greater opportunity to impact savings, namely,
 - TFS
 - EMS
 - TPS
 - TTC (non-revenue)

****Advice & Recommendations to the City Manager****

Findings – Summary Data for Large Fleets (1)

- Key statistics were gathered for the 5 areas with the largest fleets (i.e., FS, TFS, EMS, TPS, & TTC non-revenue). Data was supplied upon written request, and in some cases during interviews.
- Next two pages show comparison of each area in terms of cost drivers such as labour, parts, performance measurement, procurement practices, information systems, fuel management, and vehicle abuse¹
- There are clearly differences in practices, where further consolidation, sharing, and process improvement will benefit the City overall – these opportunities are explored in further sections of this report

1 – Throughout this report, the industry term “Vehicle abuse” is defined as avoidable damage/wear such as due to mishandling vehicle, unauthorized add-ons, not following standard operating procedures, not bringing in vehicle for diagnosis of a problem as soon as possible

Findings – Summary Data for Large Fleets (2)

	Fleet Services	EMS	Fire	Police	TTC NR
Facilities (in scope repairs)	13	1	2 + 1 marine	3 + 1 marine	2
Vehicles/Equipment	4800	382	359	1617	750
Maintenance/Parts Total FTEs	154	14	37	83	28
<i>Maintenance/Parts - Maintainers</i>	127	10	26	44	20
<i>Maintenance/Parts - Parts</i>	12	2	2	21	3
<i>Maintenance/Parts - Supervisory</i>	15	2	9	18	5
Total Stock-keeping Units (SKUs)	11000	583	3500	n/a	6672
SKUs in stock	3500	543	3500	418	900
Total Demand	\$5,600,000	\$677,000	\$750,000	\$3,054,000	\$900,000
Demand per Vehicle	\$1,167	\$1,772	\$2,089	\$1,889	\$1,200
% of demand in Stock	80%	82%	70%	n/a	37%
Avg Inventory \$	\$1,400,000	\$240,000	\$610,000	\$266,520	\$120,000
Turns	4.0	1.45		11.6 / 11.75 / 16.6	1.5
Measurement of Performance	80% fill rate target	99% stock availability	70% fill rate target	95% fill rate target	n/a
Parts Contract	Napa Consignment (all)	Napa	Napa Consignment (20% of stock)	PMMD to advise	
Procurement by	Napa	PMMD	Fire/Napa	Police/ PMMD	TTC Mats&Proc
Inventory Control by	Napa/FS	EMS	Fire	Police	TTC Mats&Proc
Purchasing system	SAP	SAP	SAP	SAP	IFS
Inventory system	TAMS	SAP	M5/TAMS	RTA	IFS
Fuel management system	ProFuel	ProFuel	ProFuel	none	none
Shifts	1-3	3	Single staggered (M-F)	2	2
Cost of obsolescence/shrink (annual)	\$7,500	\$7,000	0	0	0
Time spent on double entry (hrs/day)	8	0.6	0.75	7	
Cost of vehicle abuse (parts/labour)	\$1.8 million	Not an issue	Not an issue	Not an issue	Not an issue
Avg cycle time on parts	Immediate to weeks	Immediate to weeks	Immediate to weeks	1/2 day to 1 day typical	Immediate to weeks
NOTE: Data was supplied upon written request, and in some cases during interviews. Data was not validated as to consistency of assumptions made.					

Advice & Recommendations to the City Manager

Findings – Summary Data for Large Fleets (3)

Repair Cost per Unit

Division	Units 2009	Cost 2009	Per Unit	Units 2010	Cost 2010	Per Unit	Change \$	Change %
TTC (4)	808	\$ 3,234,967	\$ 4,004	788	\$ 3,314,122	\$ 4,206	\$ 202	5.0%
Police	1,617	\$ 8,065,761	\$ 4,988	1,617	\$ 8,453,485	\$ 5,228	\$ 240	4.8%
Fire (3)	359	\$ 3,101,953	\$ 8,641	359	\$ 2,768,622	\$ 7,712	\$ (928)	-10.7%
EMS	352	\$ 1,731,355	\$ 4,919	382	\$ 1,860,051	\$ 4,869	\$ (49)	-1.0%
Fleet (1)	4,300	\$ 25,948,870	\$ 6,035	4,300	\$ 24,489,670	\$ 5,695	\$ (339)	-5.6%
Fleet (2)	4,800	\$ 25,948,870	\$ 5,406	5,354	\$ 24,489,670	\$ 4,574	\$ (832)	-15.4%
(1) - Unit count excluding attachments, trailers, off-road motorized equipment, chainsaws, blowers, weed eaters								
(2) - Unit count including all the above								
(3) - Used base salary numbers provided plus indicated 25.81% benefit rate; actual GL amounts not provided.								
(4) - Excluding lawnmowers and power washers and misc unit on Duncan Shop's equipment list								...

****Advice & Recommendations to the City Manager****

Notes to Summary Data

- EMS: total vehicles represents 2010 vehicle counts versus current 305. 2009 and 2010 actual vehicle count was higher due to deferral of vehicle disposals for G8/G20 requirements.
- TFS count of 26 Maintainers includes 6 personnel maintaining fire fighting equipment of approximately 10,000 pieces

****Advice & Recommendations to the City Manager****

Findings – Door Rates Compared

- City door rates are very roughly comparable, given many factors that influence rates (e.g., vehicle type, make, model, year, accessories)
- External door rates vary tremendously
- Possible explanations include
 - Light vehicle maintenance is highly competitive
 - Vendors are possibly providing “foot in the door” pricing
 - Vendors possibly make money from “up-selling” (i.e., encouraging customers to buy other services not originally requested)
 - Vendors possibly have different quality standards to the City
 - There may be differences in cost base (e.g., lower labour rates, less overhead, more efficient processes)
- City door rates are not very comparable to external door rates due to above factors, and because City does not calculate separate door rates for light and heavy vehicles of different makes, models, etc.
- OMBI model does however, provide a common algorithm: can compare door rates within the City, and with municipalities across the country

****Advice & Recommendations to the City Manager****

Findings –

2. Based on Work Sampling & Survey within FS

****Advice & Recommendations to the City Manager****

Work Sampling Study Overview (1)

➤ Background:

- Work Sampling is a statistical technique for determining the proportion of time spent by workers in various defined categories of activity
- Particularly useful to analyze non-repetitive or irregularly occurring activities
- Because work sampling normally extends over a long period (2 to 4 week), occasional irregularities do not overly affect results¹
- The origin of the technique goes back to the early 1930's¹

➤ Purpose is to answer the following questions:

- What is the utilization of fleet services garage resources?
- Fleet/bay utilization – how much capacity is available for work?

¹ Handbook of Industrial Engineering, 2nd Edition

Work Sampling Study Overview (2)

- Ellesmere Garage only – 2 shifts Monday to Friday from 7 am to 11 pm
- Study period to date: Aug 11/2011 to Sep 1/2011
- Conducted by:
 - Consultant Team Member
 - Corporate Fleet Services Division staff member
 - Corporate Finance Division staff member
- Total observations by role:
 - M2's & Apprentice: 2171
 - M1's: 405
- Data Validity:
 - With 2171 samples, the % split for each observed task can be identified with at least a precision of 2% with 95 % confidence
 - Due to the high-level nature of this exercise, limited time and other factors like observer bias, seasonality, and limited availability of professionally trained observers, data should be interpreted as directional only.

****Advice & Recommendations to the City Manager****

Employee Survey Overview

- Purpose: Gather data on how workers spend their time at different garages and compare to findings from work sampling study at Ellesmere
- Conducted at all 13 Fleet Services garages
- Staff roles that participated in the survey were Apprentice, ASA, M1, M2, Automotive Inventory Clerk, Foreperson, Welder and Garage Servicer
- 63 employees completed surveys with the following at each garage:

Location	Completed Surveys
1050 Ellesmere	11
150 Disco Rd.	4
320 Bearing Rd	2
1401 Castlefield	4
1026 Finch Ave. West	9
Oriole	2
Bermondsey	6
Northline	1
86 Ingram Drive	5
843 Eastern Ave.	8
1008 Yonge St.	2
King St.	1
50 Booth Ave.	8
Total	63

Note: Survey data is to be taken as notional only. Data was not validated as to the consistency of information provided. It is based on an overall participation rate of approx. 43%, and may be impacted by current environment/relationships, volume of work, seasonality, and limited time for staff for error correction.

****Advice & Recommendations to the City Manager****

Work Sampling – Categories of Activities

Category	Definition	Target action
Customer value added task	What the customer wants and is willing to pay for	Streamline*
Business required task	What the business needs to do in order to accomplish what the customer requires but isn't necessarily value added	Where possible reduce
Customer not required task	Activities and tasks performed internally that aren't required by the customer	Where possible eliminate
Mixed	Tasks that could potentially be categorized as either of the categories above but was difficult to tell during observation	Categorize as one of the 3 terms above and take respective action

* Streamline could include improving pace, productivity, setting work standards and working towards them, working on the right things, etc...

****Advice & Recommendations to the City Manager****

Work Sampling – Activities in Detail (1)

Activity	Definition	Category
Wrench time	Maintenance of vehicles/equipment including issue diagnosis (using diagnostic tools/software), mutually exclusive of other activities listed below.	value added
Clerical / office work	Any work that is clerical in nature, including initiating WOs, closing WOs, doing paperwork, scheduling, filling in part order request forms, sending faxes/emails, etc.	business required
Vehicle cleaning	Internal/external cleaning/washing of vehicles/equipment being serviced.	value added
Waiting for ____ (specify)	A state when an employee is not on break, but is unable to do work because waiting for something (eg. job instructions, parts) and is left idle. This is mutually exclusive from all other tasks. Would not apply if an employee is doing something else while waiting.	not required

****Advice & Recommendations to the City Manager****

Work Sampling – Activities in Detail (2)

Activity	Definition	Category
Looking for vehicle	Searching for a particular parked vehicle in order to bring it into the bay and work on it or take a part from it. Driving the golf cart to locate vehicles would also fall into this category.	Not required
Ordering / obtaining / delivering parts	Interfacing with parts staff, employees, NAPA employees, or with part vendors in order to acquire parts or check status of part orders. Also includes walking to get parts and returning to work location with parts.	business required
Other walking / traveling	Includes traveling within the facility or outside of facility for any reason aside from obtaining/delivering parts and looking for vehicles.	mixed
Moving vehicle for work	Driving the client vehicles in and out of a bay.	business required

****Advice & Recommendations to the City Manager****

Work Sampling – Activities in Detail (3)

Activity	Definition	Category
Searching/ selecting tools	Searching for/selecting the right tools to use for a job.	Business required
Break / lunch	A state when an employee is on an official break from work duties and/or is idle without waiting for anything in particular.	Business required
Prep for start/end of work	Including setting up/packing up for a job, getting changed for/after work, organizing work area at start/end of a job, cleaning work area at start/end of a job, etc	mixed
Looking up information	Including looking up procedures for repairs, equipment history in system, past work, etc.	Business required
Attending/ participating in meeting	Could include staff meetings, training, or other official employee gatherings for announcement or discussion purposes.	Business required

****Advice & Recommendations to the City Manager****

Work Sampling – Activities in Detail (4)

Activity	Definition	Category
Communicating (verbal)	Could include brief/de-brief for a job, interaction with clients, phone calls, and any other general conversation.	mixed
Working offsite	Employee was called out for a vehicle breakdown offsite.	mixed
Other (specify)	Any other tasks that do not fit into the previously described categories.	mixed

****Advice & Recommendations to the City Manager****

Work Sampling Results vs. Industry Standards

Article in "Fleet Maintenance": *Technician Productivity*, August 17, 2011

"A well-run shop might run 49 percent wrench time, or have 230 minutes of wrench time per day. A new vehicle dealer's wrench time might even be higher."¹

¹ Author: Joel Levitt

<http://www.vehicleservicepros.com/article/10234252/technicianproductivity?print=true>

How Mechanics Spend Their Time

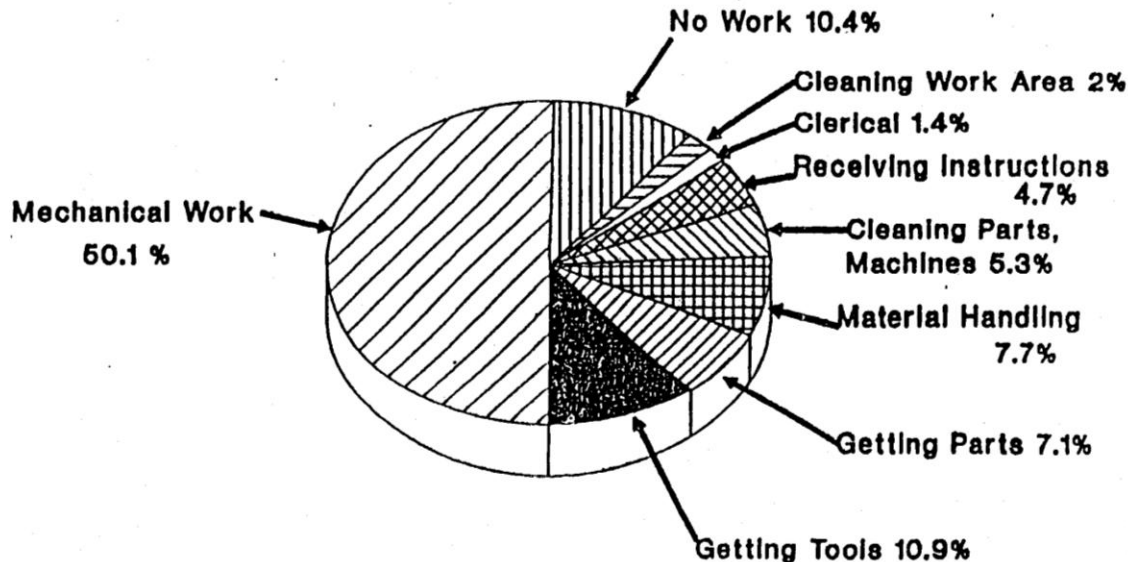
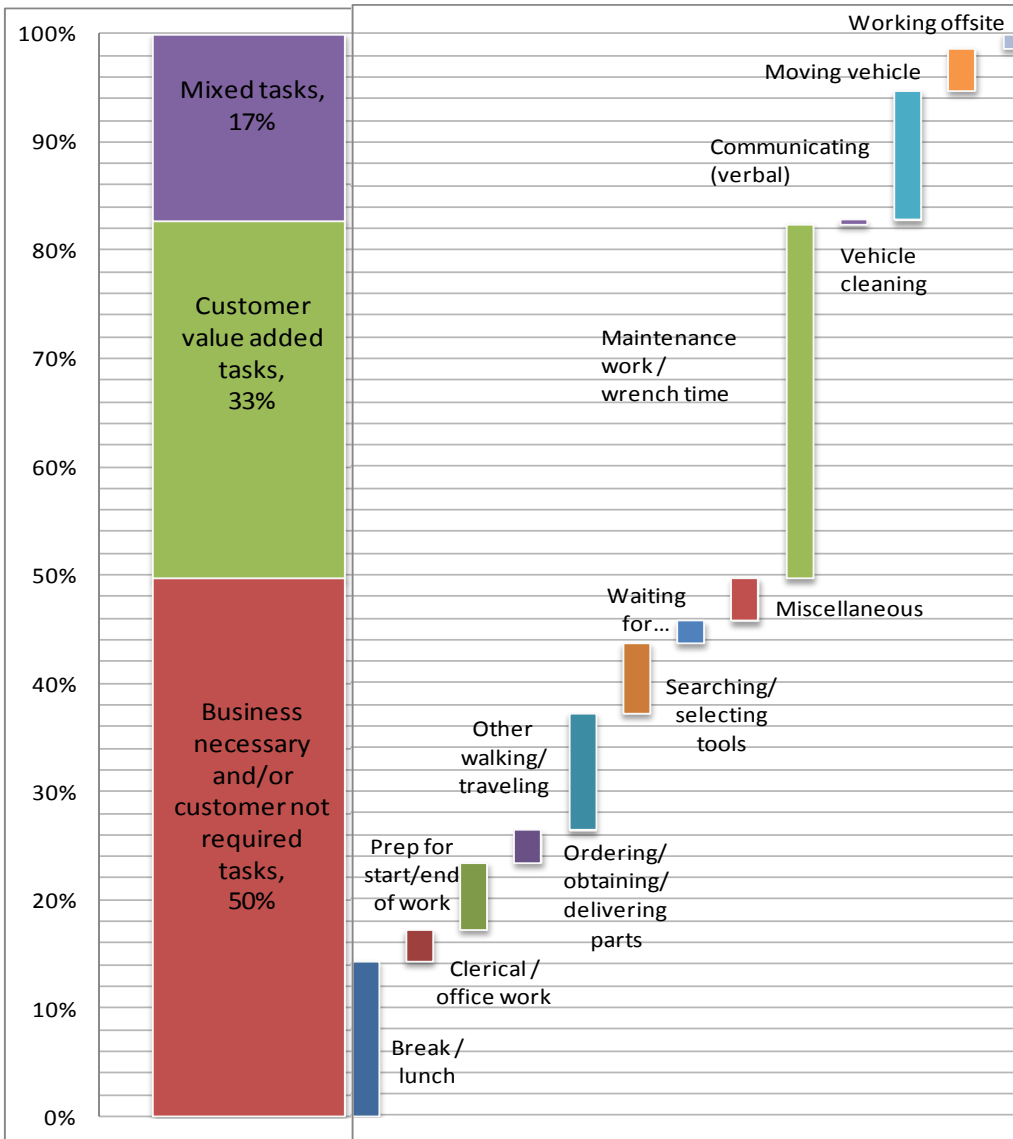


Image Source: training seminar one of the managers attended by the Society of Automotive Engineers (from late 80's to early 90's)

****Advice & Recommendations to the City Manager****

Work Sampling Results - Mechanics

Directional data only due to high-level nature of exercise, limited time, observer bias, seasonality, and limited availability of professionally trained observers.



****Advice & Recommendations to the City Manager****

Labour Cost Drivers

Fleet maintenance total salaries and benefits:

- 2010 actual - \$13,933,000
- 2011 approved budget - \$14,063,600
 - 91 M2 mechanics - \$ 8,372,762
 - 9 Apprentice Mechanics - \$816,535
 - 17 M1 mechanics – \$1,661,123
 - Others - \$3,213,180
 - 5 Garage Servicers
 - 4 Welders type 2
 - 1 Welder type 3
 - 12 Parts staff
 - 15 Other staff
 - 6 Taxi Inspection Staff

****Advice & Recommendations to the City Manager****

Focus on Improvement Areas

Task	Portion of the time task was observed, with 95% confidence	Improvement Opportunities
Communicating (verbal)	10.7% - 13.4%	Reduce through better supervision
Waiting for...	1.4%-2.6%	Eliminate if possible
Miscellaneous (including attending meetings/training, looking up information, and looking for vehicles)	3.1% - 4.8%	
Searching/selecting tools	5.5%-7.6%	Reduce through implementing quick service model and better planning of parts
Other walking/ traveling	9.5%-12.1%	Reduce through improved facility layout and better maintenance scheduling and planning
Ordering/ obtaining/ delivering parts	2.2%-3.7%	Reduce through implementing quick service model; better planning of parts; new parts contract
Prep for start/end of work	5.2%-7.2%	Reduce through better supervision
Clerical / office work	2.2%-3.6%	
Break / lunch	12.8%-15.8%	Reduce to current allowable break time of 12.5 % through better supervision; eliminate running lunch (ie, paid 30 min lunch)

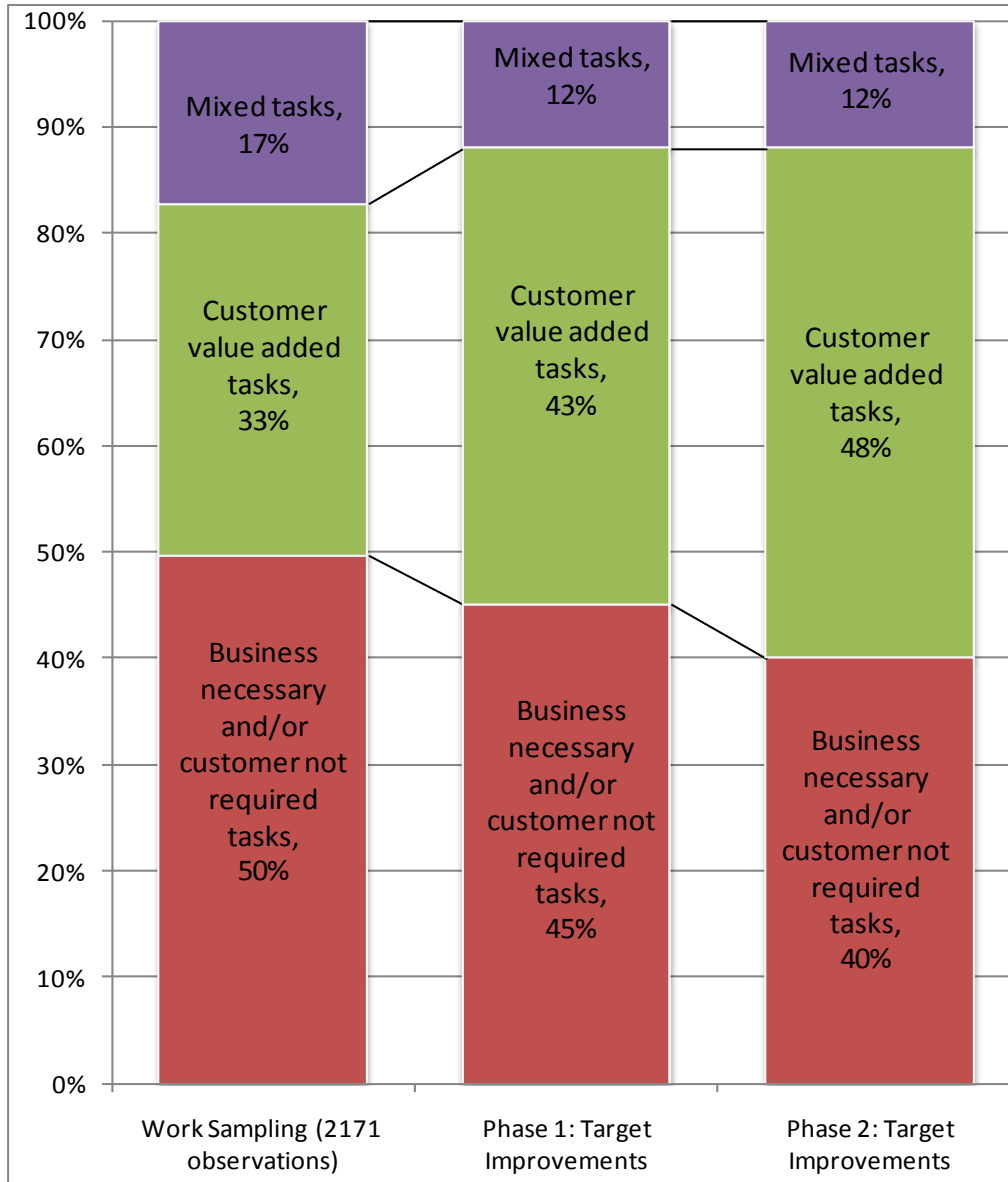
Every 1% improvement equates to ~\$91,000

(based on: 1. M2 & Apprentice salaries, see slide 'Labour Cost Drivers'
2. Assumption by the City that Ellesmere is the best representation of garage operations, however further detailed validation may be needed by location)

****Advice & Recommendations to the City Manager****

Directional data only due to high-level nature of exercise, limited time, observer bias, seasonality, and limited availability of professionally trained observers.

Setting Targets for Improvement



****Advice & Recommendations to the City Manager****

Phase 1: FS has set target of 10% improvement from better supervision & better management of time spent on:

- Communication (verbal)
- Breaks/lunch
- Prep for start/end of work

Phase 2: Improvement of 5% can be achieved through:

- Implementing a Quick Service process
- Improved maintenance planning and scheduling

Phase 3: Further savings (not quantified here) can be obtained from:

- Improvements in throughput including process re-engineering the wrench time, better work standards, improvements in pace
- Implementing other improvement initiatives (see following slides)

Directional data only due to high-level nature of exercise, limited time, observer bias, seasonality, and limited availability of professionally trained observers.

Presentation of Work Sampling Data (1)

- Consider other ways to group work sampling data to better communicate results to staff, eg, similar to City of Edmonton categorization below

Categories	Activities
Work Assignment and Communication	Work Assignment
	Communication Regarding Job - Non Foreman
	Communication Regarding Job - With Foreman
Repair	Wrench time
Repair related activities	At Offsite Job
	Job Travel Inside Shop
	Obtaining Parts
	Obtaining Technical Information
	Obtaining Tooling From Other Than Stall
	Moving / Waiting for Equipment to Arrive
Work Documentation	Data Recording for the Job
	Service Writing
Wrap Up /Housekeeping	Wrap Up/ Housekeeping
Other	Waiting for Tools
	Waiting for Instruction
	Waiting for Parts
	Waiting for Clearance Or Interference
	Waiting for Operator / Engineer
	Idle
	Personal
	On Unscheduled Break
	Unaccountable
	Morning Stretch
Time Unavailable for Repair	Breaks / lunch
	Training / Meetings

****Advice & Recommendations to the City Manager****

Presentation of Work Sampling Data (2)

Principles

However, the following principles must be adhered to:

- Collect same level of detail (ie, # of activities) regardless of categorization, to better understand improvement potential
- Targets must be adjusted to reflect new categorization (eg, target for say, Repair = Wrench Time + Obtain Parts = 50% + 3.5% = 53.5%)
- Targets can be achieved by reducing **ANY** activity, regardless of which category it is in, and increasing wrench time
- All paid time (including breaks, meetings, training) should be included, and targets set

****Advice & Recommendations to the City Manager****

Presentation of Work Sampling Data (3)

Principles (cont'd)

- Do not focus solely on increasing wrench time -- there are other ways to improve overall productivity besides increases to wrench time, as discussed elsewhere in this report – take a balanced approach to productivity improvement. Examples of other improvement areas are
 - Absenteeism
 - Tardiness
 - Overtime
 - Work methods
 - Quality of workmanship
 - Quality of parts
 - Adherence to standard procedures
 - Pace

****Advice & Recommendations to the City Manager****

Other Identified Improvement Opportunities (1)

Based on employee interviews and survey feedback – need further validation

#	Potential Opportunity	Considered Action
1	"Biggest problem is our shop is open 16-24hrs and NAPA serves us until about 3:30pm"	Implement a parts supply and inventory management system that will address demand
2	Customers are inconsistent in bringing vehicles on time for preventative maintenance, impacting overall maintenance program	Apply a quantitative Service Level Agreement between Fleet Services and its customers to manage maintenance requirements and expectations with an effective escalation process
3	"In the past there was a sweeper line, this area had all the parts and expertise to do overhauls" – need to consider what is the most efficient way to do work	Identify and embed best practices on the shop floor to ensure an efficient maintenance operation. This could include , special teams, modifications to shop floor and work station layout
4	"90% of jobs should have an average time to be done within or met by the technician"	Agree on and implement labour standards where applicable for specific job types i.e. brake jobs, oil changes, tune-ups ...etc.
5	Limited technical tools for diagnosis, no updates, no access to the internet for information	Conduct tool / information requirements assessment focused on effective and efficient maintenance
6	"Give parts person a cell phone - need to know where part is now"	Have better maintenance planning and scheduling so that parts are available when work is being done and there is no need for mechanics to chase parts

****Advice & Recommendations to the City Manager****

Other Identified Improvement Opportunities (2)

Based on employee interviews and survey feedback – need further validation

#	Potential Opportunity	Considered Action
6	“At Bermondsey it would be helpful to have an individual to dump vehicles and wash to speed up the repair process. Trucks here are booked in fully loaded and can't be worked on until dumped. This person could also run for parts to help speed up the process.”	Can be considered as part of # 3
7	“There are times we have to go to other shops to get a laptop to scan vehicles...sometimes we go there and it has been sent to another shop...we have vehicles like ‘Side Loaders’ that we can't scan, so vehicles have to go to the dealer...while we are capable of repairing the vehicle”	Can be considered as part of # 5
8	“Need a wash program for ‘Side Loaders’ and all trucks, a lot of unneeded repairs are caused by not cleaning trucks”	Can be considered as part of # 3
9	“Contracted work still needs attention once it's returned to the City. They do not deliver what they promise and do not have any consequences for their lack of commitment to fulfill their obligation”	Implement quantitative Service Level Agreement between Fleet Services & contractors; better manage maintenance requirements and expectations with effective escalation process and clearly defined exit strategy

****Advice & Recommendations to the City Manager****

Other Identified Improvement Opportunities (3)

Based on employee interviews and survey feedback – need further validation

#	Potential Opportunity	Considered Action
10	The list of approved contractors is sometimes too restrictive. The vendors on it could be full and as a result the procedure is to get 3 estimates (which you usually have to pay for) from 3 other places before contracting the job out. This takes a lot of effort and resources and it would just be useful to add more people to the list. Sometimes vendors on the approved list are really far away which also takes up a lot of time and resources	Re-evaluate the process for selecting a contractor to outsource work.
11	Sometimes there is a big line up for the ASA so clients go to the mechanics directly to expedite getting their vehicles looked at. Work may or may not get recorded into the system	Implement the quick service model where customers bring in their vehicles for quick jobs/diagnosis. Model strives to minimize wait time for the customers (ex. guaranteed to be seen in quick service bay in 5 min or less).
12	Some vehicle users don't report vehicle problems at the end of their shift and end up having to repair the vehicles in the morning instead of overnight, which could've reduced the number of vehicles down	Work with client groups to make it a more common practice for vehicle users to bring their vehicles in at the end of their shifts in order to minimize vehicle downtime Can be considered as part of # 2
13	Some people take advantage of sick coverage provisions.	Quantify and assess through rigorous attendance management .

****Advice & Recommendations to the City Manager****

Other Identified Improvement Opportunities (4)

Based on employee interviews and survey feedback – need further validation

#	Potential Opportunity	Considered Action
14	New equipment comes in and sometimes mechanics aren't trained on it. This results in longer job times	Identify areas of required training and create a training program aimed at better preparing mechanics for repairs of new equipment
15	"Have rotating/temp mechanics to cover seasonal increases in demand or to cover vacation schedules in the summer time"	Evaluate the feasibility of this suggestion
16	Sometimes there is miscommunication between drivers and mechanics because they don't actually talk and the WO submitted are incomplete. Results in incomplete repairs or longer repair times	Identify what data is typically missing when incomplete WOs are submitted and put a process in place to ensure-all information is submitted (ex. change WO request form to highlight the requirement for specific information)
17	ASA / M1s that enter WO info into the system were not all trained together, so they use different codes and the information in the system isn't consistent. As a result, it's sometimes confusing to diagnose based on past history. Better training is desired for these positions. Also, the codes themselves might need to be redefined.	Identify codes that are most inconsistent and agree upon the correct procedure for using them. Distribute this information to all parties that require this training

Other Identified Improvement Opportunities (5)

Based on employee interviews and survey feedback – need further validation

#	Potential Opportunity	Considered Action
18	It is difficult to know if the actual vehicle is on the road or not	Evaluate how information about vehicles is maintained; consider technology improvements that would allow for better vehicle tracking
19	Not enough lube bay staff which results in lube and oil changes not getting done	Validate with proper maintenance schedule and adjust resourcing if necessary
20	Vehicle abuse by customers is an issue that shortens life of the vehicle	Quantify vehicle abuse and create a plan, working with customer groups to reduce it
21	Vehicles are parked everywhere, making them hard to find, especially in winter	Consider strategies for documenting where vehicles are parked (ex. asking customers to indicate location when they submit a WO)
22	“Some trucks are too large for the bays, so we don’t have the facilities to fully service our customers”	Consider vehicle sizes as part of facility planning projects and address issue, where needed, on a garage by garage basis
23	“There is a lack of investment in tools”	Consider how tools funded; work with mechanics to determine fair model for tool acquisition
24	Limited number of computers results in line-ups when mechanics have to enter job notes at the end of a job.	Validate issue and consider whether more/other tools are required for documenting work in the most efficient and effective manner Can be considered as part of # 5

****Advice & Recommendations to the City Manager****

Work Sampling Results - M1 Mechanics

Task	Portion of the time task was observed, with 95% confidence
Clerical / office work*	47.8% - 52.0%
Communicating (verbal)	25.5% - 29.3%
Break / lunch	9.6% - 12.2%
Other walking/ traveling	4.5% - 6.4%
Prep for start/end of work	2.0% - 3.4%
Maintenance work / wrench time	0.6% - 1.4%
All other tasks	2.0% - 3.4%

*Clerical/office work can include:

- Scheduling, distributing and documenting work for the day
- Dealing with outsourcing of work

- There is an opportunity to increase M1 availability on the shop floor
- Work sampling data from ASA role also suggests that there might be an opportunity to shift some work from M1's to the ASA role, while setting expectations for M1's to be more available on the shop floor
- Currently considering replacing M1s with excluded (non-union) supervisory staff

****Advice & Recommendations to the City Manager****

Directional data only due to high-level nature of exercise, limited time, observer bias, seasonality, and limited availability of professionally trained observers.

Bay Utilization Study Findings

- Ellesmere Garage only – 2 shifts Monday to Friday from 7 am to 11 pm
- Study period to date: Aug 11/2011 to Sep 1/2011
- Total 277 observations taken
- 58% of the maintenance bays were utilized* at any 1 time
- Lube bay was being utilized* 30% of the time
- Wash bay was being utilized* 10% of the time
- Key considerations:
 - Day shift is scheduled to have 10-11 staff, afternoon shift 5-6 staff
 - Bays assigned to workers, so vehicles are left parked there between shifts
 - Often workers use space outside of bay to do repairs
- Overall: there is capacity to accommodate more work at this facility
- Workers should be assigned to bays/vehicles, not vice versa (eg, cross shift or between specialists)

* Utilization here means the space was used either for work or for vehicle parking

****Advice & Recommendations to the City Manager****

Findings –

3. Based on Interviews of FS Customers

****Advice & Recommendations to the City Manager****

What FS Customers are Saying (1)

Generally Getting Better...

➤ **Quality Job**

- All customers felt quality of the work is good to excellent
- All customers felt vehicle acquisition and lifecycle management services are good to excellent

➤ **Eager to do Business**

- Attitude of FS was felt to be very positive
- Mechanics and supervisors are very attentive and helpful

➤ **Trend is Improvement**

- Many positive changes over the past few years in terms of value for money
- FS always looking for opportunities for further improvement

****Advice & Recommendations to the City Manager****

What FS Customers are Saying (2)

Opportunities for Improvement

- **Turnaround Time (ie, length of time vehicle in for repair)**
 - Perception that it's getting worse for some customers although anecdotal
 - Need measurement, quantitative 2-way SLA, at least monthly reporting, clear reward / consequences for both parties
- **Availability (ie, % time vehicle accessible when customer needs it)**
 - Some assets have no spares (eg, “we can't wait more than a month for a PM-C & FS provides no loaner despite SLA that says it will”)
 - Need to improve method of planning and scheduling
- **Communications**
 - Sometimes if a repair is going to take longer than expected, FS should be sure to inform the right people
 - Need to improve tracking and analysis of status changes, then communicate anomalies and fix over time (eg, queuing for vehicle drop-off, diagnosis, repair time, time to notify customer, time to pickup)

****Advice & Recommendations to the City Manager****

What FS Customers are Saying (3)

Opportunities for Improvement

➤ Relationship Management

- People move around -- new people struggle to understand customer needs and relationships
- Need someone who is familiar with customer's people and equipment to be a point person; should have transition period with technical & relationship management training

➤ Reporting

- FS does not have adequate reporting to customers
- Should formalize tracking 2-way measures such as schedule compliance, % planned vs unplanned, time for customer to pick up vehicle, and vehicle abuse (eg, vehicle is dirty, unauthorized add-ons, abnormal wear), and FS performance to quantitative service levels (eg, availability, turnaround time, MTTR, MTBF, total cost of ownership, spares ratio)
- Greater customer access to relevant information (eg, work order status)

****Advice & Recommendations to the City Manager****

Conclusions

****Advice & Recommendations to the City Manager****

Findings Point to Key Improvement Opportunities

- Although Fleet Services was studied in greater detail (e.g., work sampling at Ellesmere, survey at 13 FS garages, customer interviews), similar results were observed for all fleet managers across the City through
 - Data analysis
 - Multiple interviews
 - Garage tours
- Key improvement opportunities are as follows:
 1. Improve productivity & customer service levels
 2. Consolidation within Corporate Fleet Services
 3. Consolidation of TPS, TFS, EMS, TTC & FS
 4. Consolidation of parts contract
 5. Outsourcing maintenance
 6. Reduction in vehicle abuse (i.e. not operating vehicle as per standard operating procedures)
- These opportunities are discussed in the sections that follow

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

1. Improve Productivity & Customer Service Levels

****Advice & Recommendations to the City Manager****

The Opportunity (1)

Through work sampling, survey, data analysis, interviews and tours, productivity and customer service level improvement opportunities were identified across the City, including

Labour Productivity

- overtime
- absenteeism (including sick time)
- tardiness
- pace (i.e., standard time versus actual)
- labour effectiveness (e.g., avoid unnecessary work, better methodology employed)
- Improved quality of work

Capacity Utilization

- Labour (e.g., shift coverage)
- Parts (e.g., stock outs)
- Facilities (e.g., space utilization)
- Tools and special equipment

Customer Service Levels

- Asset availability
- Asset reliability

****Advice & Recommendations to the City Manager****

The Opportunity (2)

- To improve productivity & customer service levels must make changes to the following across the City:
 - Improve planning and scheduling
 - Formalize Quick Service process
 - Improve reliability and performance management
 - Clarify maintenance roles
 - Set standards/targets for labour performance and utilization
 - Improve garage/work environment
 - Improve information systems

****Advice & Recommendations to the City Manager****

Improve Planning & Scheduling (1)

Planning & Scheduling

Improved planning & scheduling =

- improved asset, labour, tools and facilities utilization
- improved asset availability, reliability, and performance
- reduced total cost of ownership through better lifecycle management
- reduced capital requirements due to lower spares ratio

Planning

- Planning horizon – asset life to next month
- Start with critical assets and components
- Develop maintenance policies (FBM / UBM / CBM); target 100% planned
- Develop job plans for all policies, including standard processes, standard parts lists, labour standards, standard measures for inspections
- Plan major milestones for asset lifecycle (e.g., overhauls, PM's)
- Develop maintenance program and adjust for budget year
- Develop capacity plan (e.g., labour skills, facilities, tools)
- Feedback loop from Engineering, schedulers, OEM's, customers

****Advice & Recommendations to the City Manager****

Improve Planning & Scheduling (2)

Scheduling

- Establish more formal Scheduler role (eg, Controller position)
- Planning horizon – 1 month to next day
- Through quantitative 2-way SLA
 - FS commits to meeting availability targets subject to blackout periods
 - Customer commits to FS controlling date/time vehicle dropped off
 - Track schedule compliance for both FS and customer
- Schedule skills, parts, bay, and tools
- Maximize capacity utilization by ensuring
 - Scheduled maintenance work is done when assets are not in use (eg, maintenance on night shift if vehicles operate during the day)
 - Balanced demand for maintenance and resources available
 - Reduced reliance on overtime and outsourcing to deal with lumpy demand
- Ensure no surprises – track # of times/impact when customer provides list of problems over and above scheduled maintenance
- Foreman role responsible for daily managing to schedule, and provides feedback to scheduler role; daily scheduling meeting(s) held

****Advice & Recommendations to the City Manager****

Formalize Quick Service Process

- Establish rules (eg, QS jobs are 20 minutes or less)
- Communicate to customer; encourage customers to bring in problems
- Greet with best diagnostician (mechanic) + people skills
- Use apprentice for busy periods – excellent diagnosis training
- Use mobile device for quicker M5 access
- Use work requests to avoid starting running clock (eg, if can't do within 20 min, then will have to schedule)
- Monitor and manage patterns that develop in QS (eg, recurring problems, correlate weather conditions with certain failures)
- **Note:** Encourage customer to bring in vehicles at end of their shift so
 - No more than 5 minutes consumed of operator time at end of shift
 - Can honour “Guarantee” that vehicle available beginning of shift next day
 - Have time to order parts with contracted service level window
 - Can encourage customers to bring in problems when first occur

****Advice & Recommendations to the City Manager****

Improve Reliability & Performance Management

- Improve accuracy of M5 data entry
- Perform detailed analysis of M5 data including
 - Pareto analysis on problem / cause / action codes
 - Root cause analysis (RCA)
 - Lifecycle analysis
- Launch campaigns (eg, change design / spec in response to recurring problems)
- Introduce Reliability-Centred Maintenance (RCM)
- Adjust maintenance policies and/or maintenance program to reduce need for unplanned work (eg, add PM tasks, change PM frequency, targeted PM)

****Advice & Recommendations to the City Manager****

Clarify Maintenance Roles

- Maintainer role (eg, how much admin, who fetches parts or vehicles)
- Working Foreman vs Lead hand
- Front-line supervisor role (eg, coach, senior tech resource, meet daily targets, ensure data accuracy)
- Scheduler role (eg, 1 month to next day schedule, customer interface, garage interface)
- Planner role (eg, asset end of life to 1 month plan, scheduler interface, customer interface, standard vs actual variance analysis, track FBM/UBM/CBM ratio)
- Reliability engineer role (eg, ensure consistency of data overall; track vehicle performance; asset lifecycle management; critical asset analysis; optimize maintenance policies for FBM/UBM/CBM; Pareto analysis of variances to standard times, top problems, root causes, actions taken)
- Admin role (vs Service Advisor?)
- Manager role

****Advice & Recommendations to the City Manager****

Set Std's/Targets for Labour Performance & Utilization

- Maximize value-added activities (eg, wrench time)
- Minimize non-value added activities (eg, excessive breaks, setup, cleanup, waiting for parts/instructions)
- Increase efforts to determine and maintain standard times for specific job types (eg, brakes, oil change, tune ups, emission tests, etc.)
- Monitor standard versus actual performance
- Ensure off-shift productivity through reporting
- Ensure off-shift parts availability through scheduling
- Supervisory roles should be on the shop floor to
 - Support maintainers in their work (eg, problem solving, removing bottlenecks, on-the-job training)
 - Monitor standard versus actual performance (ie, adherence to standard operating procedures) by walking around
 - Reward good performance and take appropriate action when targets not met

****Advice & Recommendations to the City Manager****

Improve Garage / Work Environment

- Strict cleanliness enforcement for FS staff and customers
- Strict safety enforcement for FS staff and customers (eg, safety glasses)
- Better lighting levels
- Better air flow
- Strict enforcement of no customers in garages
- Cookie cut layout and equipment
- Designated Quick Service bay and nearby parts access
- Designated area where customer waits for vehicle
- System for queuing vehicles for repair and parking completed vehicles

****Advice & Recommendations to the City Manager****

Improve Information Systems (1)

➤ M5 Functionality – Ability to

- Create job plans
- Have nested and hierarchical problem/cause/action codes by component
- Link to e-manuals

➤ M5 Integration to Parts Contractor's System (currently TAMS)

- Better planning and scheduling
- Optimize balance between inventory level and service level
- Eliminate double entry

➤ Integration with SAP

➤ Savings Potential

- significant degree of double entry to keep systems aligned
- Rough estimate provided by depts = potential collective productivity gain of approximately 2 FTE by eliminating the double entry (see Findings table)
- Requires interfaces between systems where data entered twice

	Fleet Services	EMS	Fire	Police
Time spent on double entry (hrs/day)	8.0	0.6	0.75	7.0

****Advice & Recommendations to the City Manager****

Improve Information Systems (2)

- **Mobile Solution Improves Service, Accountability, & Reporting for**
 - Quick Service bay
 - Road service
 - Remote garages (eg, for work at customer site)
- **Ensure Read-only Access to M5 Tech Specs for Parts Contractor**
 - Faster, more accurate parts identification
 - Improves turnaround time on non-stock parts
- **Give Customers Electronic Access to Work Order Status**

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

2. Consolidation within Corporate FS

****Advice & Recommendations to the City Manager****

Consolidation – Within Corporate FS (1)

Consolidate 13 garages into approx 4 main garages over time:

1. 433 Eastern

Either build new facility, build out existing facility, or assume more customer garage space and raise roof

2. Ellesmere

Take over customer garage space next door

3. Finch

Take over customer garage space next door and raise half of roof; give back existing space to customer

4. Disco?

(Need to await results of Yard Consolidation study)

****Advice & Recommendations to the City Manager****

Consolidation – Within Corporate FS (2)

Close 9 garages:

➤ 843 Eastern

- Close due to lack of capacity; cost and time to fix substantial structural and environmental issues; disruption and resultant loss of productivity
- Sell off land as surplus – savings? (Need further study)
- Opportunity cost of fixes = approx \$4+ million
- Revenue/savings more than offset building costs at 433 Eastern

➤ Other Sites

- Hand back to customers
- Sell off others (Need further study for savings calculation)

****Advice & Recommendations to the City Manager****

Consolidation – Within Corporate FS (3)

Advantages

- Can justify improved shift coverage to 7/24 x 7 days/week
- Easier to supervise fewer FS garages
- Can better manage capacity utilization
- Frees facilities capacity (mostly for customers)
- Greater efficiency and effectiveness through cookie-cut garage size, layout, equipment, SOP's, hours, measurement, manuals
- Easier to consistently implement quantitative two-way SLA with customers
- Easier to train staff on multiple vehicle types
- Lower capital/utility costs (eg, taxes, heating, capital improvements) with fewer facilities

Disadvantages

- Less convenient for some customers due to Increased operator drive time
- May require operator pickup/dropoff

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

3. Consolidation of TPS, TFS, EMS, TTC & FS

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (1)

Phase 1 – Centralized Organizational Structure

- Solid line reporting into one Director; dotted line to current one-up
- No garage closures
- Share best practices (e.g., SOP's, KPI's, reporting)
- Consolidate outsourcing contracts
- Centralized shared services (e.g., reliability engineering, vehicle acquisition, vehicle utilization, capacity planning, lifecycle management, training, technical specialization, IT support for M5)
- Centralize driver training (FS - 6 driver trainers; TFS - 2 in training division; EMS - 1 supervisor, 2 seconded paramedic FTE; TPS – handled thru Police College)
- Consolidate under single parts contract
- Labour productivity improvements
- Service Level tracking and improvements

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (2)

Phase 2 – Consolidate Garages

- Begin when FS consolidates, and wrench time improves due to more efficient and effective processes
- Consolidation will allow all groups to aspire to at least the highest service level and/or level of labour productivity across the City (e.g., if TPS has a productivity advantage, all other groups will move up to at least this level and beyond)
- Absorb capacity into FS garages, as number of vehicles serviced by FS shrinks
- Start with 1 EMS, 1 TFS

Savings:

- Sell off or re-use capacity at 2 facilities including special equipment
- Carrying less inventory overall
- Labour productivity – could absorb capacity with existing labour complement; even if not, can at least redeploy admin & supervisory staff
- Back-office efficiencies – e.g., processing 407 charges, licensing, invoice payment, contract management, warranty management , CMMS admin

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (3)

Further Consolidation

➤ **Centralized Vehicle Lifecycle Management – Cradle to Grave**

- Standardized process
- Standardize on specs - minimize specs or communicate why non-standard is needed
- How much must the City accommodate in terms of vehicle/equipment specifications? (eg, Health & Safety non-discrimination requirements)
- Monitor recalls, campaigns, economic replacement

➤ **Asset Disposition**

- Asset Disposals handled through physical & electronic auction for increased bidding pool and better selling prices
- City uses North Toronto Auction under publicly tendered contract by PMMD
- Auction buyers are registered for each sale and this information visible to the Asset Management group via Internet
- consider having minimum reserve bid on equipment sales as further precaution on gamesmanship by the bidding pool

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (4)

Further Consolidation (cont'd)

➤ Asset Utilization

- Centralized monitoring of asset utilization
- Maximize utilization by sharing common vehicles/equipment across business silos or using rentals
- Centralized loaners for common assets when in for service

➤ Fuel Management

- Fewer, bigger City depots (although need to balance with travel & queuing)
- Greater utilization of City depots (more customers, 24/7)
- Avoid using premium in engines designed for regular fuel
- Bring Toronto Parking Authority in City bulk fuel arrangement and have them use City fuel depots
- Less expensive fuel grades only
- Consider seasonally-adjusted D2 for TTC Transit electronically-controlled engines – need to experiment (eg, Ottawa); this is potentially worth about \$3.9 million in savings over 3 years, if the experiment works (see next page)

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (5)

➤ TTC to Trial D2 Diesel

- Given gross savings for a three-year period of \$3,893,250 under the three-year fuel contract with Weekly price adjustments by using seasonally-adjusted D2 instead of the currently-used D1 grade of diesel fuel, then experiment with using seasonally-adjusted D2 at least in warmer months and for electronically-controlled engines
- Offsetting costs of say more frequent change of particulate filters have not been quantified by TTC nor Western Management for this report

	Diesel Type	Adjust Period	Start	End	Estimated Total Litres	Unit \$	B100	Rack \$	Rack Disc't \$		Del'vry \$	Total Unit \$	Ext'd Price
					(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
PRICE FORM SCHEDULE 'B'													
TTC	1D B00 S15	Weekly	1/1/2011	12/31/2013	268,500,000	1.7	0.00%	0.724	0.025	100.00%	0.0046	0.7036	188,916,600
TTC	1D B00 S15	Monthly	1/1/2011	12/31/2013	268,500,000	1.7	0.00%	0.724	0.022	1	0.0046	0.7066	189,722,100
PRICE FORM SCHEDULE 'A' applied to 'B' Volume													
	2D B00 S15	Weekly	1/1/2011	12/31/2013	268,500,000	1.7	0.00%	0.687	0.024	1	0.0261	0.6891	185,023,350
	D2 B00 S15	Monthly	1/1/2011	12/31/2013	268,500,000	1.7	0.00%	0.687	0.018	1	0.0261	0.6951	186,634,350
	Savings	Weekly Price Adjustments							3-year period before adjustments				3,893,250
	Savings	Monthly Price Adjustments							3-year period before adjustments				3,087,750

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (6)

Advantages

- Improved shift coverage to 7/24 x 7 days/week
- Improved geographic coverage
- Easier to supervise fewer garages overall
- Can better manage capacity utilization
- Frees facilities capacity
- Greater efficiency and effectiveness through shared best practices (eg, layout, equipment, SOP's, hours of operation, measurement, manuals)
- Easier to train staff on multiple vehicle types
- Greater opportunity for mechanics (eg, vehicle types)
- Justifies strong centralized group of shared services (eg, reliability engineering, planning, tech specialists)

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (7)

Disadvantages

➤ Potential Barriers to Consolidation that Must be Addressed

- Will there be adequate 24/7 coverage
- Must accommodate non-standard processes (e.g., EMS decontamination)
- Must have specialized knowledge (e.g., Police and Fire equipment)
- There are security restrictions (e.g., Police)
- At what point is bigger better, i.e., economies of scale?
- How can we ensure operating groups get priority service, as it risks revenue stream, or vital services (EMS, TPS, TFS)?
- Benefits may be offset by additional travel and loaner; if need onsite garage anyway – why not fully utilize?
- Wage and union disparities (e.g., Police mechanics are non-union and paid less, TFS mechanics paid more)
- Perception is that TFS, TPS, EMS, etc. are at least as efficient and effective as corporate FS, so what's the benefit?
- If want true benefit, then we will outsource (e.g., TTC)

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (8)

Conclusions

- As FS improves productivity, it will be easier to attract TPS, TFS, EMS, etc. into a consolidated organization
- Consolidation benefits are enhanced by building superb track record with existing customer base
- Need to improve service levels – quantitative targets
- Need to address barriers and perceived disadvantages
- Alternative to consider: Merge additional business unit into consolidated group on a trial basis to prove value, one customer at a time, starting with easy wins (eg, seasonal equipment)
 - Advantages – less “big bang” impact; easier change management
 - Disadvantages – continued resistance to consolidation; delayed savings

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (9)

Necessary Conditions

- Agreement that assets are the property of the City – two-way obligations must be established based on strong Corporate principles and standards (eg, FS dictates date for bringing in vehicle for PM with sufficient lead time, respect blackout periods of Operations)
- Need to establish a qualitative and quantitative 2-way service level agreement for each customer of the consolidated Fleet Services
- Each customer under a shared service model should have the right to purchase their services elsewhere if service levels are consistently not met after a reasonable trial / stabilization period (ie, outsource externally or bring it back under in-house control)

****Advice & Recommendations to the City Manager****

Consolidation – TPS, TFS, EMS, TTC & FS (10)

Necessary Conditions (cont'd)

- Consolidated Fleet Services must be able to explain the bill each month
- Consolidated Fleet Services must prove service levels and costs are competitive to other options (eg, outsourcing) through regular benchmarking (eg, every 2 years)
- These conditions create competitive environment and therefore continuous pressure to improve efficiency, effectiveness and customer service

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

4. Consolidation of Parts Contract

****Advice & Recommendations to the City Manager****

Preliminary Parts Consolidation Savings

- Consolidation of Fleet Services, Fire, EMS, Police, and TTC NR under a Outsourced Parts solution (i.e. NAPA IBS) solution with a 10% markup on parts and straight pass through of labour

Division	Projected Savings Opportunity
Fleet Services	-\$543,400
Fire	-\$78,400
EMS	-\$63,600
Police	-\$541,900
TTC NR	-\$67,500
Total*	-\$1,294,800

Notes:

- Due to the high level nature of this exercise the figures above should be interpreted as “directional” only.
- Although the preliminary findings are encouraging, additional time should be committed to a more detailed analysis in order to collect and incorporate more refined data and to replace or vet the remaining assumptions
- * Does not include parts purchase positive cash flow impact under an outsourced consignment model

****Advice & Recommendations to the City Manager****

Parts Cost Comparison Commentary

- Consolidation and standardization of procurement and parts management of all City Fleet Parts Programs will ensure optimization and full leverage
- The City should develop a centralized and focused expertise in supply chain best practice, inventory management, strategic sourcing, and third party management and oversight
- Additionally, the City should develop a comprehensive set of key performance indicators (KPI) and share results with service providers and labour alike
 - In our interviews with mechanics and parts staff negative reaction focused on “NAPA higher costs and availability “ issues
 - These anecdotes and perceived reactions would be countered with improved communication on actual cost performance and KPI information shared with staff

****Advice & Recommendations to the City Manager****

Strategic Sourcing Opportunities (1)

- Where beneficial, the City should formalize its efforts to work with vendors to obtain the best pricing possible (focus on top 20 vendors, extend existing preferential pricing, coordinated approach for additional leverage, etc.)
- The City should develop and, where pre-existing, enforce protocols that govern sourcing decisions (parts contracts, preferred vendor lists, defined decision making authority)
 - It was inferred the sourcing of materials is inconsistent as it is a decision often left to individual parts personnel and that there is a significant opportunity to reduce parts costs through enhanced organization and control (leveraged volume, reallocation of spend onto less costly contracts)
- Other due diligence specific on total maintenance costs include a clear understanding of parts life cycle and replacement history for aftermarket (ie. NAPA vs OEM)

****Advice & Recommendations to the City Manager****

Strategic Sourcing Opportunities (2)

- Need to properly prove and communicate benefits of parts contract to employees and other departments (eg, metrics that people believe in, SLA, celebrate positive trends)
- Need to protect against parts contractor taking advantage of City over time (eg, slowly raising prices, not passing on savings, substituting lower quality parts)

****Advice & Recommendations to the City Manager****

Recommendations – Strategic Sourcing

- It is anticipated that consolidation of the parts volumes onto one or two primary parts contracts (potentially automotive/light duty parts, and, medium/heavy duty parts) would yield significant savings
 - It is important to note that the current arrangement with NAPA has resulted in what was suggested to be a 13% reduction in the cost of parts, this reduction applies primarily to light duty parts which represent 27% of unit demand and 16% of spend
 - The City should perform a detailed analysis to validate that this 13% benefit is still applicable with current competitive market rates and examine ways to reallocate spend on medium and heavy duty parts, representing 73% of units and 86% of spend, under this or similar arrangement
- A detailed comparative cost analysis should be performed between Fleet Services' NAPA pricing, PMMD's NAPA pricing, and the TPS' OSS pricing to identify "lowest current costs"
 - A high level parts costing benchmark comparative sample of 80 materials from Fleet Services' NAPA pricing report were cross referenced against the cost data of another Canadian municipality. The City's prices were found to be lower by an average of 51% and yield a 33% lower overall spend based on the consumption rates of the various sample materials

****Advice & Recommendations to the City Manager****

RFP Input Summary and Commentary

- 23 Recommendations have been forwarded to Fleet Services re the latest RFP for the Outsourced Parts Program.
- Fleet Services should consider leaning towards a supplier of medium to heavy duty vehicle parts as these represent the largest portion of the fleet (75% of vehicles)
 - Presently, NAPA branded parts only account for 27% of all parts used by Fleet Services; the other 73% of parts procured are subject to a 15% markup currently, or an anticipated 10% markup in a full IBS model
 - Fleet Services strategy of outsourcing certain light duty maintenance will lessen the light duty parts requirement even further and make alignment on medium and heavy duty even more important .

****Advice & Recommendations to the City Manager****

Other Parts-Related Opportunities

- Measure performance of the consignment inventory and actual order cycle time
 - Current NAPA inventory effectiveness metric on total fill against customer demand
- Improve shop floor communications (ie, stores and mechanics)
 - Parts fulfillment service performance
 - Expectations re parts contract service standards on replenishment / lead times
- Communicate benefits of Citywide participation in parts contract agreement
 - How to best leverage City buying power with major parts suppliers
 - Parts contractor may be best to minimize price & maximize service Citywide
- Streamline new vehicle on-boarding process, including
 - Planning for in-stock parts and support
 - Longer range capacity planning (eg, skills, facilities, tools)

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

5. Outsourcing Maintenance

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance – Observations

- Currently, across the City, outsourcing is used on a piece meal basis
- Sometimes outsourcing is used to handle overflow, yet there is lots of capacity at City garages (i.e., substitute outsourcing for proper planning and scheduling)
- For FS, outsource about 20-25% -- to cover uneven demand, do limited warranty work and extending warranty; and do work for which FS cannot compete like tires, glass, body work, transmission, welding, etc.

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance – Advantages & Disadvantages

- The City has distinct advantages over private sector
 - Economies of scale on vehicles, especially heavy
 - No profit component for shareholders
 - No bias to up-sell services for additional profit
 - No bias to cut corners on quality to save time/costs

- The City has distinct disadvantages over private sector
 - Weak competitive drive
 - Poor productivity levels
 - Tendency to avoid risks (e.g., premature part replacement)
 - Sometimes quality level is excessive
 - Sometimes driven by health and safety excess (e.g., “unrealistic” and costly accommodations)

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance (1)

Alternative 1

- Continue to support workforce to achieve higher levels of productivity
- Continue to benchmark external vs. internal labour and overhead costs
- Outsource as much as possible, wherever external cost is lower (e.g., light vehicles maintenance)
- As percent of work that is outsourced increases, it is increasingly important to build contract management expertise and monitor quality and cost of external workmanship

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance (2)

Alternative 2

- Introduce friendly cooperation and competition
- Outsource one large garage to a world class private service provider through fair bid process
- Conduct fair competition for 3 years with full transparency as to methods and measures
- Support workers to improve productivity
- Monitor apples-to-apples measures using the same information systems
- Winner takes all, possibly including outsourced work (e.g., tires, windshields, engine blocks, transmissions, welding, body work)

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance (3)

Alternative 3

- Pick one garage location, and negotiate or ask for volunteers to introduce an incentive program
- Tie incentive to increased performance based on standards
- Incentive can be non-monetary or monetary
- Was tried in one of the municipalities prior to amalgamation and productivity improved (program retired after amalgamation)

****Advice & Recommendations to the City Manager****

Outsourcing Maintenance (4)

Advantages of Alternative 1

- Status quo
- Easier to implement
- Should all aspects of fleet services be considered a core service for the City?

Advantages of Alternative 2

- Fairness perceived by all parties
- Much cheaper for City no matter who wins due to increased competition
- Taxpayer can't lose

Advantages of Alternative 3

- Creates an environment that provides “friendly competition” and rewards good performance
- Doesn't take much incentive to increase productivity and job satisfaction

****Advice & Recommendations to the City Manager****

Key Improvement Opportunities --

6. Reduce Vehicle Abuse

****Advice & Recommendations to the City Manager****

Vehicle Abuse can be Avoided

- DEFINITION: “Vehicle abuse” is defined in the industry as avoidable damage/wear such as due to mishandling of the vehicle, unauthorized add-ons, not following standard operating procedures, not bringing in vehicle for diagnosis of a problem as soon as possible
- Currently an issue with Fleet Services
- Chargebacks from Fleet Services = \$1.8 million
- There is more vehicle abuse that is not charged back to the customer
- Costs taxpayers money and results in lower productivity – can be significantly reduced through Operating lines of business

****Advice & Recommendations to the City Manager****

Summary of Savings and Re-allocated Costs

****Advice & Recommendations to the City Manager****

Savings Potential (1)

➤ Higher Labour Performance

- minimize variance to standard
- Rough estimate of 5% improvement based on plant tours and high-level benchmarking (note: 5% improvement = $5 \times \$91,000^* = \$455,000$)
- Note that these savings are hard to achieve in current climate regarding labour/management relations

➤ Higher Labour Utilization

- maximize wrench time
- Rough conservative estimate of 15% improvement in wrench time based on work sampling to date and high-level benchmarking (note 15% improvement = $15 \times \$91,000^* = \$1,365,000$)

➤ Higher Vehicle Utilization

- fewer vehicles better shared
- buy vs. rent

*Based on: 1. M2 and Apprentice salaries provided by the City

2. assumption by the City that Ellesmere is the best representation of garage operations, however further detailed validation may be needed by location

****Advice & Recommendations to the City Manager****

Savings Potential (2)

➤ **Lower Costs through Consolidation of FS Garages**

- economies of scale
- Rough conservative estimate of 5-10% of combined fleet budgets based on high-level benchmarking (e.g., less supervisory staff, fewer facilities and less equipment, shared best practices, shared centralized services such as planning and reliability engineering, better capacity utilization, greater geographic and shift coverage)

➤ **Lower Cost of Purchasing and Managing Parts**

- New parts contract - more City participants / lower prices / best terms
- Rough conservative estimated savings of \$0.5 - 1.5 million

➤ **Lower Lifecycle Cost through Equipment Specification & Acquisition Standards**

- fewer parts
- easier to share vehicles
- easier to maintain fleet

****Advice & Recommendations to the City Manager****

Savings Potential (3)

- **Less Vehicle Abuse (this is not “the cost of doing business”)**
 - Minimize non-standard add-ons and modifications
 - Excessive wear and tear
 - Not following standard operating procedures
 - Not bringing in vehicle as soon as possible (eg, when PM due, when failure occurs or might occur)
 - FS = \$1.8 million annually (estimate) x 50% reduction = \$0.9 million
- **Lower Cost of Fuel – TTC should Test D2 Fuel on all Diesel Vehicles**
 - If successful, savings = approx \$3.9 million over 3 years

****Advice & Recommendations to the City Manager****

Reallocation or Sharing of Resources / Costs

Human Resources

- Centralized planner
- Centralized reliability engineer
- Controller role at each garage
- *Example:* As shown on page 14, Fleet Services has 8 supervisory staff for 13 garages, EMS 2 for 1 garage, TFS 9 for 3 garages, TPS 18 for 4 garages, and TTC 5 for 2 garages (numbers do not include lead hands, except for TPS); with consolidation of garages, some supervisory staff could be shared / upgrade skills / reallocated

Other Resource Changes to Fund through Savings

- Facility renewal after consolidation
- Upgrade information systems (e.g., job plans, integration, mobile)

****Advice & Recommendations to the City Manager****

Roadmap -- Pulling it All Together (1)

Short-term Implementation Action Items

- Standardize on a few simple measures across all areas providing fleet maintenance within the City, and set targets for improvement (e.g., door rate, PM compliance, % planned work, wrench time)
- Implement FS improvements Phases 1, 2 and 3 (see pg 35)
- Improve productivity & customer service levels for all areas across City
 - Improve planning and scheduling
 - Formalize Quick Service process
 - Improve reliability and performance management
 - Clarify maintenance roles, especially for supervisory & planning/scheduling
 - Set standards / targets for labour performance and utilization
 - Improve garage / work environment
 - Improve information systems

****Advice & Recommendations to the City Manager****

Roadmap -- Pulling it All Together (2)

Short-term Implementation Action Items (cont'd)

- Plan consolidation within Corporate Fleet Services (from 13 garages)
- Implement consolidation of TPS, TFS, EMS, TTC & FS – Phase 1
- Explore further short-term consolidation opportunities respecting
 - Centralized vehicle lifecycle management
 - Asset disposition
 - Asset utilization
 - Fuel management
 - TTC trial of D2 diesel fuel
- Issue parts contract
- Implement short-term next steps re parts
- Analyze cost-benefit of alternatives 1, 2, & 3 re outsource maintenance
- Reduce vehicle abuse (ie. defined as “not operating vehicle as per standard operating procedures”)

****Advice & Recommendations to the City Manager****

Roadmap -- Pulling it All Together (3)

Long-term Implementation Action Items

- Consolidation within Corporate Fleet Services - implementation
- Consolidation of TPS, TFS, EMS, TTC & FS – Phase 2
- Outsourcing maintenance – implementation of alternatives 1, 2 and/or 3
- Consolidation of parts contract across all groups
- Implementation of medium and long-term next steps re parts

****Advice & Recommendations to the City Manager****