



CITY of NOVI CITY COUNCIL

**Agenda Item 1
May 9, 2011**

SUBJECT: Approval of resolution to authorize Budget Amendment #2011-3

SUBMITTING DEPARTMENT: Finance

CITY MANAGER APPROVAL: 

BACKGROUND INFORMATION:

Attached is the budget amendment for the DPS items included in the estimates for 2010-11 in the recommended 2011-12 budget. This amendment is presented in advance of the fourth quarter year-end amendment to provide lead-time for equipment to be in place for the 2011-12 winter season. The delivery time from date of order for larger vehicle equipment is generally 6-9 months. The final fourth quarter budget amendment will be presented at the City Council meeting on June 20, 2011.

The items included in this budget amendment were presented in the 2010-11 estimates and the City Manager's recommended budget.

The March 9th memorandum on "Snow Removal Level of Service Improvement Recommendations" from Rob Hayes, DPS Director/City Engineer is enclosed with highlighted sections describing the improvements.

RECOMMENDED ACTION: Approval of resolution to authorize Budget Amendment #2011-3

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Galt				
Council Member Fischer				
Council Member Margolis				

	1	2	Y	N
Council Member Mutch				
Council Member Staudt				
Council Member Wrobel				

MEMORANDUM



TO: CLAY PEARSON, CITY MANAGER
FROM: ROB HAYES, DPS DIRECTOR/CITY ENGINEER *R74*
SUBJECT: SNOW REMOVAL LEVEL OF SERVICE IMPROVEMENT RECOMMENDATIONS
DATE: MARCH 9, 2011

Background

Based on guidance received at the February 28, 2011 City Council meeting, DPS needs to decrease the time required to achieve 100% safe and trafficable subdivision streets following an abnormally large winter storm event. Specifically, the goal for any size winter storm would be to make all City roads (i.e., major roads and local/subdivision streets) safe and trafficable within 24 hours of the end of the storm (defined as the time at which frozen precipitation stops falling).

DPS would need additional resources to be able to realistically achieve this goal. DPS staff members have developed the recommendations described below as a list of potential resource-related alternatives that could be implemented; however, please note that none of the recommendations is a "silver bullet" for all winter storms; if implemented, they would only increase the likelihood of the goal being met.

The recommendations do not include alternatives that could be implemented without an additional cost to the City. These include easily-adopted ideas such as recruiting non-DPS MAPE workers to assist with snow removal, maximizing the use of Administrative staff to operate pick-up trucks with front plows, as well as improving language in the MAPE contract to help to make more DPS workers available during major winter storm events.

The recommendations summarized in the following paragraphs relate to additional equipment, contracted services and operational improvements.

Equipment Recommendations

All of the prioritized equipment-related recommendations listed below would improve the efficiency of our snow removal operations. The first two are for dump trucks because during the major storm on February 20-21, DPS had as many as five of our 15 large dump trucks broken down simultaneously. As discussed at the February 28th meeting, this can primarily be attributed to DPS's aging dump truck fleet and the high frequency of repairs needed to return trucks to service. The next two recommendations are for smaller pieces of equipment that would speed clearing of subdivisions and sidewalks, and the last one specifically relates to improving the dump truck fleet efficiency.

1. **Purchase one new tandem axle dump truck to augment DPS's tandem fleet at an approximate cost of \$225,000.** Tandem axle dump trucks are used primarily on major roads, and if an additional tandem truck were procured, DPS crews would be able to clear major roads sooner, which means that crews would then be able

to begin clearing subdivisions that much sooner. Tandem axle trucks have a 10 cubic yard dump box capacity and are the most versatile pieces of equipment in our fleet. Because of their ability to transport heavy loads, the trucks are used to clear snow, haul sand and gravel, and remove saturated materials off site during water main breaks and ditching projects. Relating to snow removal, the Department's tandem axle trucks are primarily dispatched to continuously clear 138 lane-miles of County major roads in Novi. When one of these trucks breaks down, a single axle dump truck (with a six yard capacity hence 40% less efficient) must be used instead.



Tandem Axle Dump Truck

- Purchase one replacement single axle dump truck to replace one of the single axle trucks that is past its useful life at an approximate cost of \$175,000.** Single axle dump trucks are used to clear snow, haul sand and gravel, and perform shoulder maintenance. In the winter months, single axle trucks are assigned to continuously clear nearly 110 lane-miles of two-lane major roads and 280 lane-miles of neighborhood streets. Although these trucks carry less de-icing material, they have a shorter wheel base that makes them more efficient for clearing neighborhood streets and cul-de-sacs. The next truck scheduled for replacement is #670 (a 1988 Ford with approximately 93,000 miles that is in poor condition).



Single Axle Dump Truck

3. **Purchase two box blades at a cost of approximately \$12,000.** Mounting large capacity box blades on a front-end loader and backhoe during heavy snow events would speed the clearing of cul-de-sacs by up to 15% and of parking lots by as much as 50%.



Box blade mounted on front-end loader

4. **Purchase a tractor-mounted snowblower and V-plow to clear pathways at an approximate cost of \$20,000.** Currently, DPS uses utility vehicles with lightweight plows to clear municipal sidewalks and pathways. This equipment can handle small snowfall amounts effectively; but when snow amounts exceed four inches, it is not possible to comply with Novi's ordinance that requires all pathways to be clear within 24 hours of the end of the storm. Using a large snowblower and a V-plow mounted on DPS's tractors would expedite the clearing process and free operators to focus on clearing roadways.



Tractor-r



r-mounted V-plow

Purchase a GPS-based automated vehicle locating (AVL) system for the dump truck fleet at an approximate cost of \$19,300. The real-time monitoring of up to 20 vehicle assets in DPS (i.e., all large and small dump trucks) would use GPS technology to locate vehicle positions while in operation during snow removal operations, and allow for better management and reporting of roadway clearing completion status. The system would be accessed by DPS managers using a secure

log-in and pass code through an internet browser. The online application would display a map with the current location of all vehicles, noting their location, travel time, travel distance, vehicle operating status, and on-board equipment operating status (such as blade position, salt spreader status, and brine application status). Online reporting tools would provide data that could be used to determine vehicle costs over any defined time period.



Sample Screenshot of a Real-Time AVL System Output

Contracting Recommendations

Contracting for snow removal services is an efficient way to add resources to effectively fight abnormally large snow events. The City currently uses a single contractor for back-up services and the obvious advantage has been that DPS has been able to augment its resources by mobilizing the contractor during large winter storm events. The primary disadvantage, however, is cost. Based on the unit prices in the current contract, the cost to contract services ranges from approximately 20% higher (when our crews are on double time) to 50% higher (when crews are on straight time). These prioritized contracting recommendations would supplement the resources that DPS normally commits to fighting a major winter storm:

1. **Retain multiple snow removal contractors to maximize the availability of resources when major winter storms occur.** Currently, the City is under contract with a single emergency snow removal contractor. This contractor has performed well when needed; however, the company is limited by the number of operators and heavy pieces of snow removal equipment it can commit to Novi for heavy snow events that exceed four inches (especially given its other customers in the metropolitan area). Because of this, we recommend that two additional contractors be retained for as-needed snow removal services.
2. **Increase the level of contracting for snow removal at all City facilities to allow DPS to concentrate its focus on roadways.** During a snow event DPS is required to call-in at least one worker to clear municipal parking lots (Police Headquarters, fire

stations, CEMS, Civic Center, and the Novi Ice Arena), which means we have fewer snow plow operators that could otherwise be committed to clearing roadways. If the clearing of all municipal lots were contracted-out, critical DPS labor resources could be shifted to clearing roads instead.

Operational Improvement Recommendation

Regardless of complexity, all operations have room for improvement. To improve DPS's snow removal operation and enhance overall efficiency, we recommend that the City retain a consultant to develop best practices and procedures, establish benchmarks and performance measures, and create an operator manual that would guide snow removal operations. There are several consulting firms in Michigan that specialize in this area of operational improvement, and the approximate cost of this service is \$15,000 for a comprehensive review and report.

Summary

In total, all of the recommendations detailed above have a cost of \$466,300. Approving the purchase of any number of these items would improve the overall effectiveness and efficiency of DPS's snow-fighting operation.

Please contact me if you have any questions or comments in regard to this memorandum and the recommendations contained herein.

cc: Victor Cardenas, Assistant City Manager
Kathy Smith-Roy, Finance Director
Matt Wiktorowski, Field Operations Senior Manager

**BUDGET AMENDMENT# 2011-3
RESOLUTION**

NOW, THEREFORE BE IT RESOLVED that the following Budget Amendment# 2011-3 is authorized:

	<u>INCREASE (DECREASE)</u>
GENERAL FUND	
REVENUE	
Appropriation of Fund Balance	<u>\$ 470,840</u>
APPROPRIATIONS	
DPS	
Other Services & Charges (Data Processing: AVL system using GPS technology \$19,290; ruggedized laptops \$4,450; transmission software & scanner \$5,100; Professional services: Snow removal report/study \$15,000; Building Maintenance -\$14,000)	\$ 29,840
Capital Outlay - Heavy equipment (two new dump trucks \$395,000); Miscellaneous equipment (box blades \$12,000; tractor mounted snow plow \$20,000); Building Improvements (restroom improvements \$14,000)	<u>441,000</u>
	<u>\$ 470,840</u>

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Council of the City of Novi at a regular meeting held on May 9, 2011.


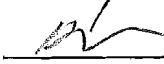
Maryanne Cornelius
City Clerk

**CITY OF NOVI
Budget Amendment Request (BAR) Form**

Brief Description of Requested Item (Include justification, reallocation of funds if applicable, etc.):
 In preparation for the FY 2011-12 budget, requests for two Toughbook Laptops, diagnostic software and a scanner were made by DPS Fleet Division. The Field Services Complex and Police Department garages do not have the ability to use diagnostic software that come with most new(er) vehicles and equipment. Purchasing two Toughbook Laptops, diagnostic software and a scanner will bring both garages into the 21st century and help to eliminate the cost of "tearing down to diagnose" fleet issues. If we pay a vendor to diagnose an issue, we're unnecessarily paying that vendor to "tear down" and reassemble a vehicle component for its subsequent tear down, repair and re-assembly by DPS mechanics. Sending vehicles out for diagnosis reduces the fleet's availability time and costs more than it would if we had this diagnostic capability in-house. This would result in estimated savings ranging from \$150 to \$700 per issue, depending on the type of issue. Breakdown of costs: Allison Transmission Diagnostic Software \$1,400, Scanner \$3,667, two Toughbook Laptops \$4,450.

Please include account number for amendment, as well as the offsetting account number (funding source). If you do not know the account number, please provide the description.

<u>Account No.</u>	<u>Line Item Description</u>	<u>Amount</u>
101-442.00-802.000	Data Processing (2 Toughbook Laptops)	4,450
101-442.00-802.000	Data Processing (Allison Transmission Diag. software and scanner)	5,067
101-000.00-680.000	Fund Balance	(9,517)
		\$ -




Director/Dept. Head Requesting:		Date 4/11/11
Finance Department Review:		4/26/11
Manager's Office Approval:	_____	_____

**CITY OF NOVI
Budget Amendment Request (BAR) Form**

Brief Description of Requested Item (Include justification, reallocation of funds if applicable, etc.):
 DPS would like to reallocate funds from the Other Services and Charges Category (Building Maintenance) to the Capital Outlay Category (Building Improvements). Reallocating these funds will allow us to renovate the Ladies Room at the Field Services Complex.

Please include account number for amendment, as well as the offsetting account number (funding source). If you do not know the account number, please provide the description.

<u>Account No.</u>	<u>Line Item Description</u>	<u>Amount</u>
101-442.00-976.000	Building Improvement	14,000
101-442.00-934.000	Building Maintenance	(14,000)
		\$ -


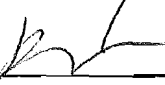

Director/Dept. Head Requesting:		<u>Date</u> 4/26/11
Finance Department Review:		4/26/11
Manager's Office Approval:		4/26/11

**CITY OF NOVI
Budget Amendment Request (BAR) Form**

Brief Description of Requested Item (include justification, reallocation of funds if applicable, etc.):
 Purchase of one new Tandem-Axle Dump Truck (replaces #699 - 2000 Sterling, 69,234 miles), and one new Single-Axle Dump Truck (replaces #670 - 1988 Ford, 92,031 miles) to provide needed snow and ice control. These trucks are multi-purpose and will provide services for a variety of field service operations year-round.

Please include account number for amendment, as well as the offsetting account number (funding source). If you do not know the account number, please provide the description.

<u>Account No.</u>	<u>Line Item Description</u>	<u>Amount</u>
101-442.20-984.000	Heavy Equipment	395,000
101-000.00-680.000	Fund Balance	(395,000)
		\$ -



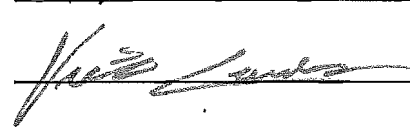
Director/Dept. Head Requesting:		<u>Date</u> 4/26/11
Finance Department Review:		4/26/11
Manager's Office Approval:		4/26/11

**CITY OF NOVI
Budget Amendment Request (BAR) Form**

Brief Description of Requested Item (Include justification, reallocation of funds if applicable, etc.):
 DPS requested an AVL Communications system in the preparation of the FY 2011-12 budget. The AVL system consists of real-time monitoring of 20 vehicle assets using GPS technology to locate asset positions in operation. This request advances two City Council Goals including the development of a government structure and staff skills necessary for the effective delivery of customer services and maintaining a fiscally responsible government. Knowing where vehicle assets are allows the City to account for its resources at any time and dispatch personnel more efficiently. The AVL Communications project has been recommended for purchase in FY 2010-11 by the City Manager's office.

Please include account number for amendment, as well as the offsetting account number (funding source). If you do not know the account number, please provide the description.

<u>Account No.</u>	<u>Line Item Description</u>	<u>Amount</u>
101-442.20-802.000	Data Processing	19,290
101-000.00-680.000	Fund Balance	(19,290)
		\$ -




Director/Dept. Head Requesting:		<u>Date</u> 4/26/11
Finance Department Review:		4/26/11
Manager's Office Approval:		4/26/11

**CITY OF NOVI
Budget Amendment Request (BAR) Form**

Brief Description of Requested Item (Include justification, reallocation of funds if applicable, etc.):
 Per Rob Hayes memo, "Snow Removal Level of Service Improvement Recommendations", dated March 9, 2011, several items are recommended to aid DPS in snow clearing operations; two box blades, one for a front-end loader and one for a backhoe are needed to help speed up the clearing of cul-de-sacs by up to 15% and parking lots by as much as 50%. A tractor-mounted snowblower with V-plow to expedite the clearing process of the City's pathways. DPS would also retain a consultant who specializes in best practices and procedures to guide snow removal operations.

Please include account number for amendment, as well as the offsetting account number (funding source). If you do not know the account number, please provide the description.

<u>Account No.</u>	<u>Line Item Description</u>	<u>Amount</u>
101-442.20-982.000	Heavy Equipment (two box blades)	12,000
101-442.20-982.000	Miscellaneous Equipment (tractor-mounted snowblower/v-plow)	20,000
101-442.20-816.000	Professional Services (consultant-snow removal operation)	15,000
101-000.00-680.000	Fund Balance	(47,000)
		\$ -

Director/Dept. Head Requesting:		<u>Date</u> 4/26/11
Finance Department Review:		4/26/11
Manager's Office Approval:		4/26/11