



# CITY of NOVI CITY COUNCIL

Agenda Item 1  
December 21, 2009

**SUBJECT:** Approve Novi's Energy Efficiency and Conservation Strategy for submission to the Department of Energy in the amount of \$533,100.

**SUBMITTING DEPARTMENT:** Green Venture Team/Grant Compliance Subcommittee

**CITY MANAGER APPROVAL:**

EXPENDITURE REQUIRED	\$533,100
AMOUNT BUDGETED	Off-set by grant proceeds (\$533,100)

**BACKGROUND INFORMATION:** On September 28, 2009, the City of Novi contracted with AKT Peerless to develop an Energy Efficiency and Conservation Strategy (EECS) pursuant to the requirements of the Energy Efficiency and Conservation Block Grant (EECBG) required to be submitted to the Department of Energy (DOE) no later than January 6, 2010. Since the formal release of the funding opportunity announcement by the U.S. Department of Energy (DOE) on March 26, 2009, we have taken the necessary planning steps to ensure the proper completion of the 2009 EECBG grant requirements. A chronological summary of the remaining EECBG milestones is as follows:

- ⬇ **Within 18 Months after Award**
  - All funds **must** be obligated or committed. Each project approved for funding must be competitively bid in accordance with federal procurement requirements.
- ⬇ **Within 24 Months after Award**
  - First Annual Report is due to the DOE.
- ⬇ **Within 36 Months after Award**
  - All funds **must** be expended.
- ⬇ **Within 48 Months After Award**
  - Second annual report is due to the DOE. Project performance will be monitored by the DOE to ensure acceptable performance for **all** awards.

The EECS has been completed and presented in Section 5.0 of the attached Executive Summary (ES). The strategy lays the foundation for Novi's strategic plan for implementing sustainable energy savings, green house gas reduction methods and job creation projects.

Council will note that the staff recommendation varies slightly from the consultants to incorporate non-motorized pathway master plan. Using AKT's energy use analysis of select municipal buildings, staff recommends the following Energy Conservation Measures (ECM) to be implemented using EECBG funds:

Activity/ECM	Building	Recommended EECBG Fund Allocation	Total Estimated Annual Savings	Summary
Energy Efficiency Retrofits	Civic Center	\$ 151,361	\$ 59,810	See Section 4.2 in ES
Energy Efficiency Retrofits	Ice Arena	\$ 128,070	\$ 20,906	See Section 4.1 in ES
Energy Efficiency Retrofits	Department of Public Services	\$ 68,836	\$ 2,259	See Section 3.6 in ES
Energy Efficiency Retrofits	Fire Stations #1 & #4	\$40,035	\$ 9,604	See Sections 3.1 thru 3.4 in ES
Energy Efficiency Retrofits	Meadowbrook Commons	\$ 19,075	\$ 4,574	See Section 3.5 in ES
Energy Efficiency and Conservation Program	n/a	\$ 5,000	n/a	Install a Civic Center dashboard display at the Civic Center for public outreach. The dashboard will display the Civic Center energy model on a continuous loop, energy savings and energy program updates.
Non-Motorized Pathway/Sidewalk Master Plan	n/a	\$50,000	n/a	To identify through a Master Plan approach a program to link current and future pathways, sidewalks and trails within the City.
EECS and Administration	n/a	\$ 70,723	n/a	\$60,475 of these funds has previously been awarded to AKT Peerless
<b>Total</b>		<b>\$533,100</b>	<b>*\$97,153</b>	

\* Savings noted here reflect staff revised recommendations from the ECM solutions presented by AKT Peerless.

**RECOMMENDED ACTION:** Approve Novi's Energy Efficiency and Conservation Strategy for submission to the Department of Energy in the amount of \$533,100.

	1	2	Y	N
<b>Mayor Landry</b>				
<b>Mayor Pro Tem Gatt</b>				
<b>Council Member Crawford</b>				
<b>Council Member Fischer</b>				

	1	2	Y	N
<b>Council Member Margolis</b>				
<b>Council Member Mutch</b>				
<b>Council Member Staudt</b>				

**ENERGY EFFICIENCY AND CONSERVATION STRATEGY (EECS)  
FOR THE ENERGY EFFICIENCY AND CONSERVATION BLOCK  
GRANT (EECBG) PROGRAM**

**City of Novi City Council**

**AKTPEERLESS Environmental  
and Energy Services**



# EECBG Background



# EECBG Application

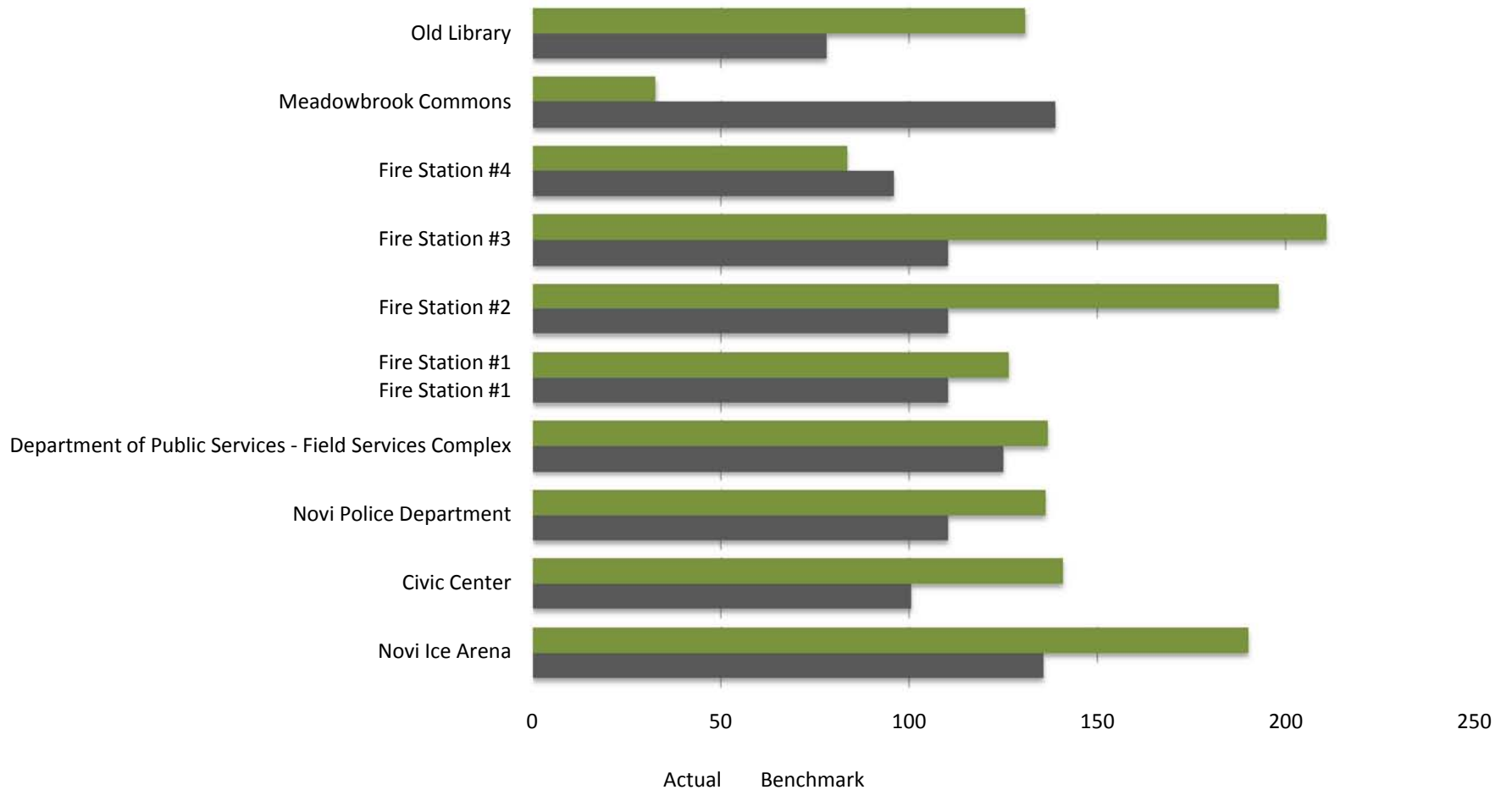
- EECBG Program award \$533,100
- Final EECS and EECBG application materials must be submitted by January 6, 2010
- AKT Peerless Energy and Environmental Services contracted to complete energy audits and EECS



# Energy Audits

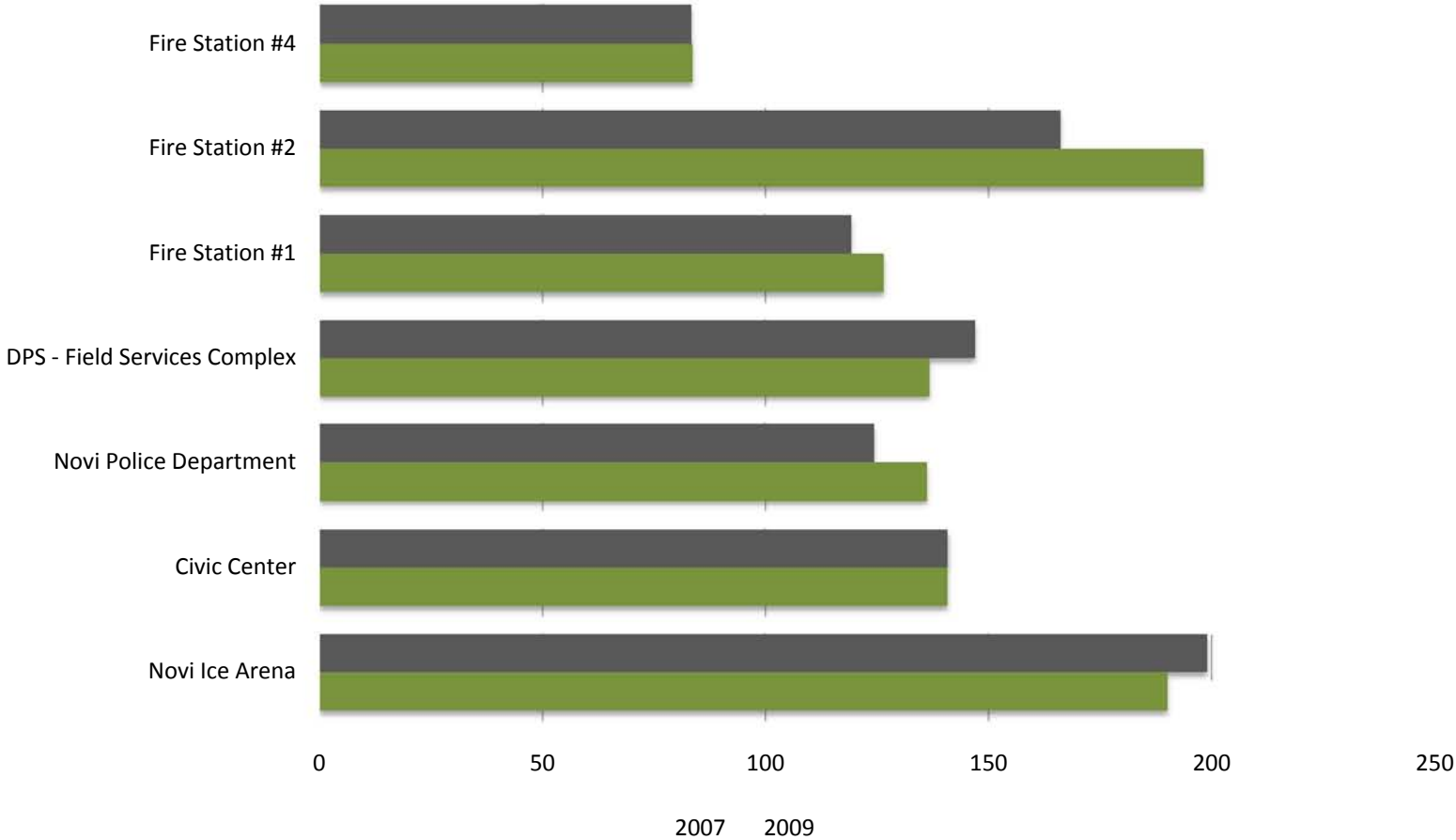
# Baseline Energy Use

Performance Benchmark: Combined Energy Use Index (EUI)  
KBtu/sq.ft./year



# 2007 Baseline Comparison

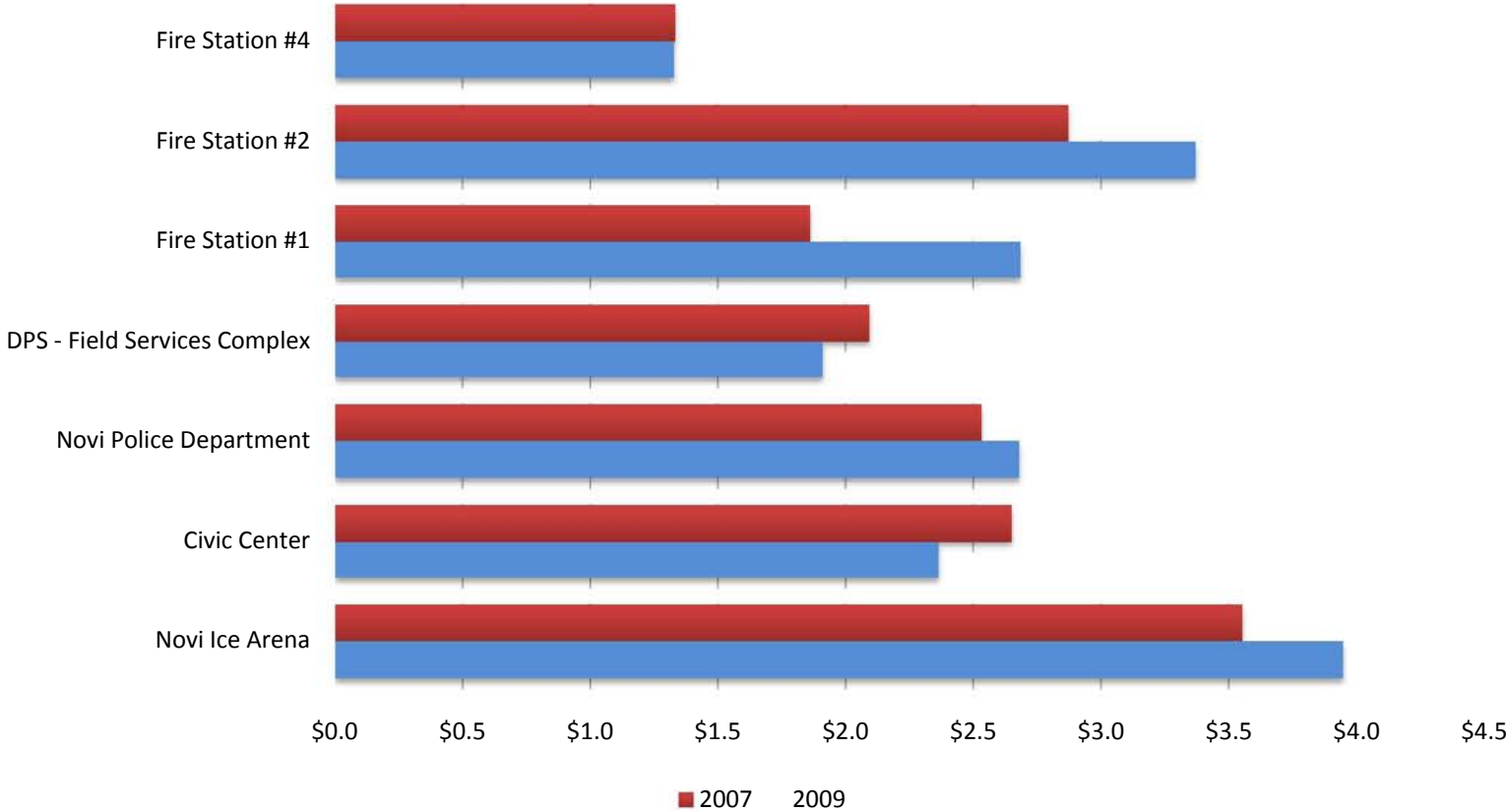
2007 EUI Compared with 2009 EUI (KBtu/sq.ft./year)





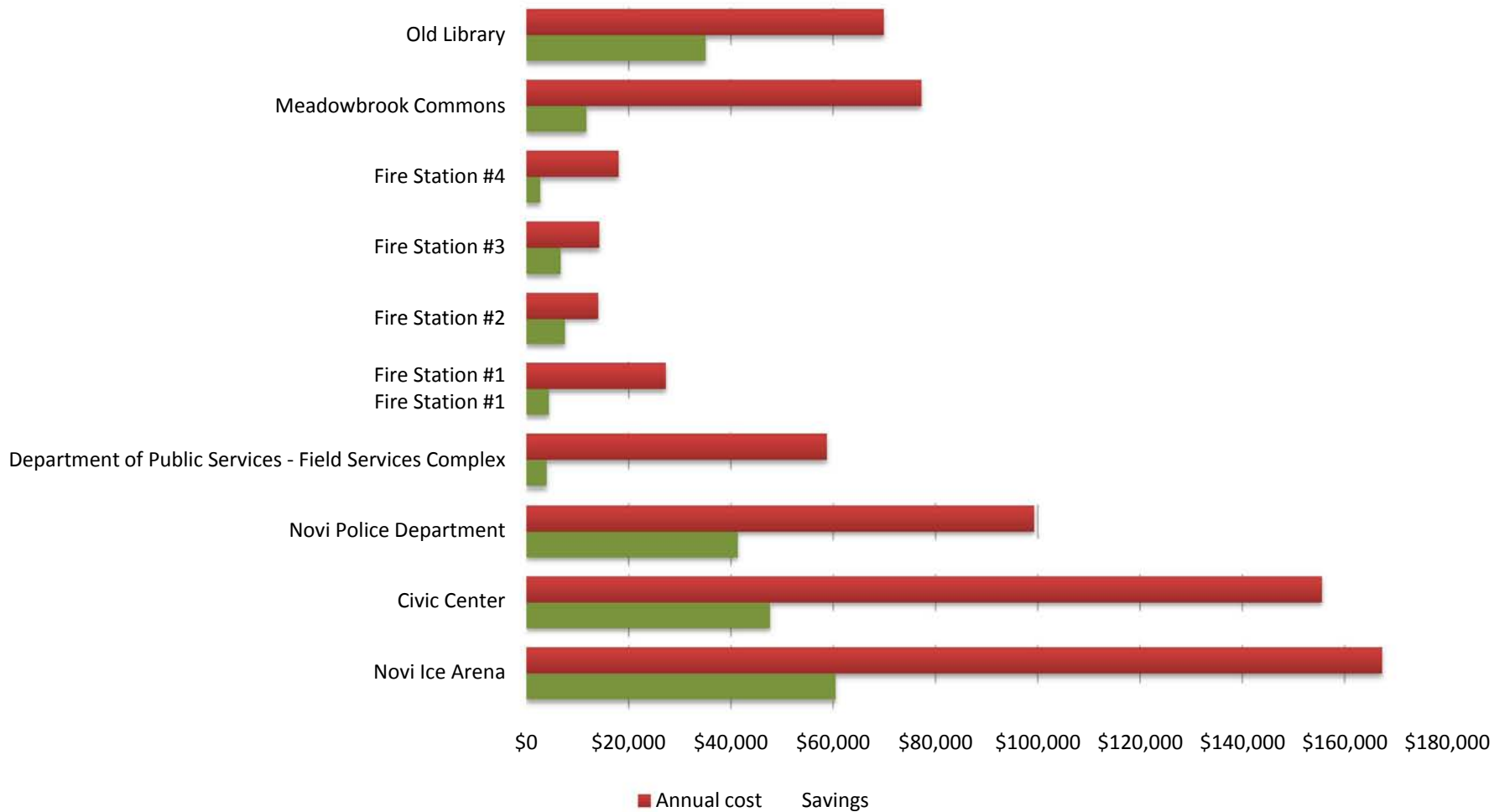
# 2007 Baseline Comparison

2007 ECI Compared with 2009 ECI



# Baseline Energy Use

## Potential Cost Savings: Combined

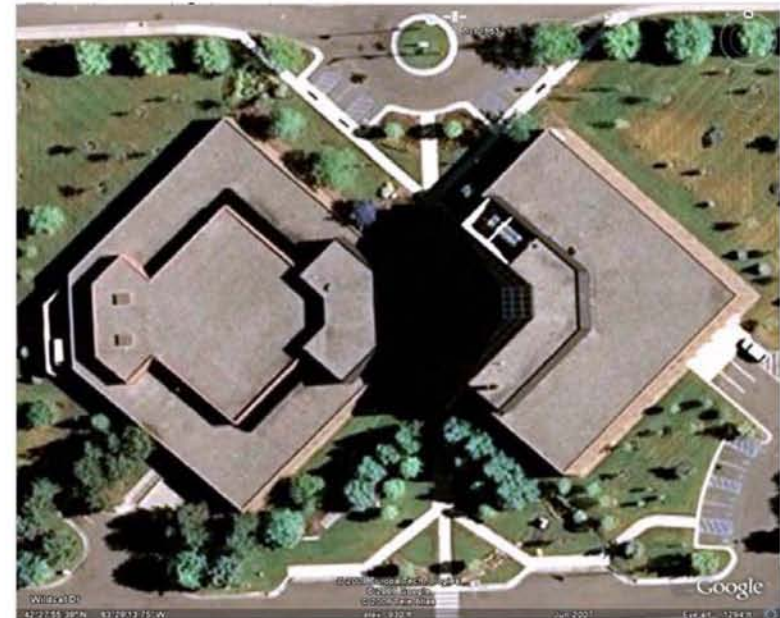


# Level I Walk-Through Energy Analysis

- Identify Low Cost Efficiency Measures
  - ▣ Lighting, sensors, controls . . .
- Completed 6 Level I Energy Audits
- Fire Stations #1-4, Meadowbrook Commons and DPS

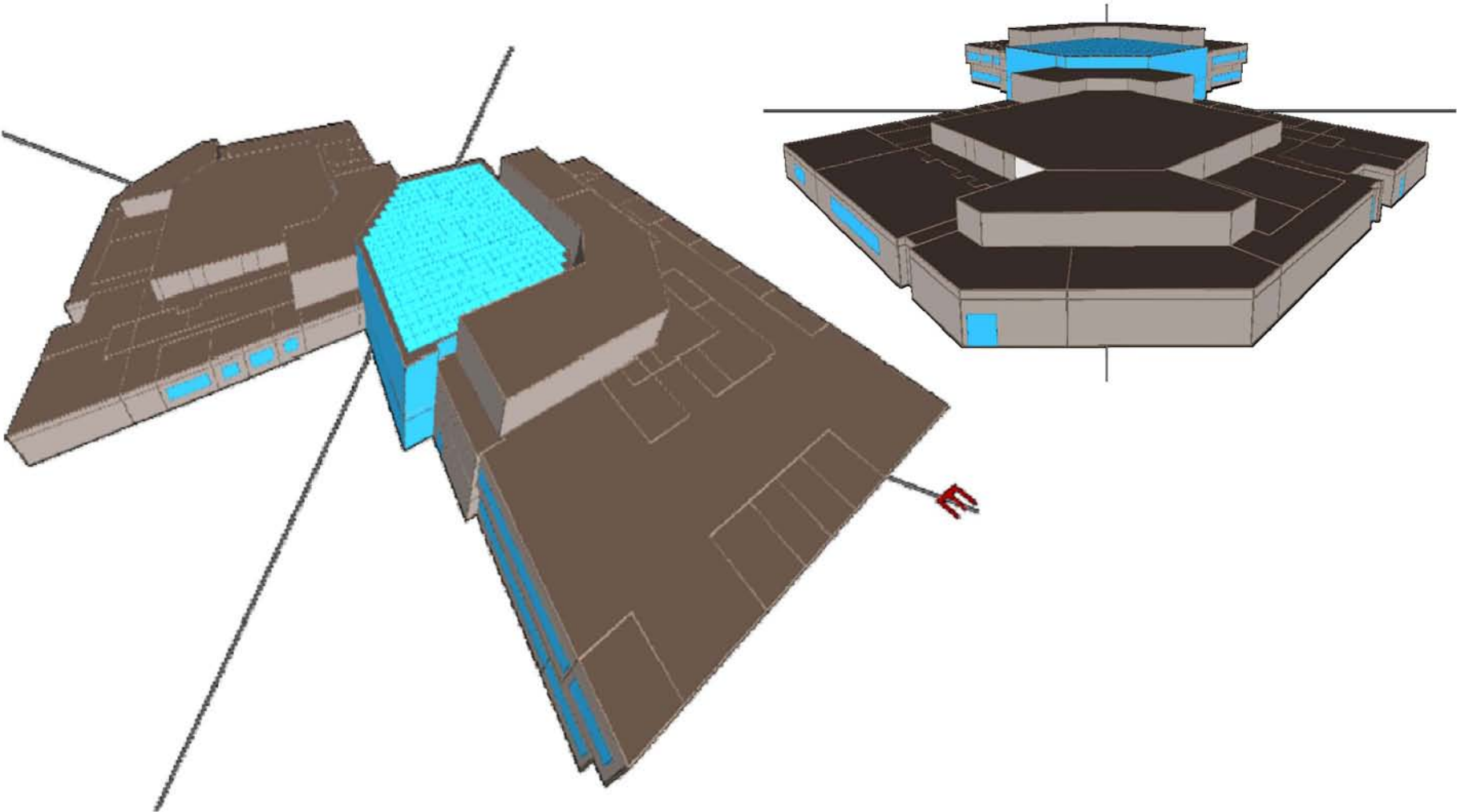


# Level II – Engineering Analysis



- More In-depth Engineering Analysis of a Building's Systems
- Completed 2 Level II Energy Audits
- Created Energy Model for the Civic Center

# Civic Center Energy Model





# Recommendations

# Energy Strategy

Energy Efficiency Retrofits  
Energy Program  
Regional Cooperation

- Complements and advances green initiatives
- Retrofits municipal building stock
- Leverages multiple sources of funding and positions Novi to receive more funding
- Provides energy efficiency tools and mechanisms to all sectors of the economy
- Provides community-wide impact and outreach
- Sustains Benefits beyond 3 Year Funding Period
  - ▣ Energy Retrofit Fund and Energy Savings

# Level I Energy Audit Results

<b>Building</b>	<b>Additional First Cost (\$)</b>	<b>GHG Reduction (Metric Tonnes)</b>	<b>Simple Payback</b>	<b>Total Annual Savings (\$)</b>
<b>Fire Station #1</b>	\$34,157	56.4	4.1	<b>\$8,272</b>
<b>Fire Station #2</b>	\$13,742	26.1	4.6	<b>\$2,997</b>
<b>Fire Station #3</b>	\$5,481	9.6	5.0	<b>\$1,088</b>
<b>Fire Station #4</b>	\$5,878	11.4	4.4	<b>\$1,332</b>
<b>Meadowbrook Commons</b>	\$19,075	39.4	4.2	<b>\$4,574</b>
<b>DPS Field Services</b>	\$68,836	20.5	30.5	<b>\$2,259</b>
<b>Totals</b>	<b>\$147,167</b>	<b>163.4</b>	<b>7.2</b>	<b>\$20,522</b>



# Level II Energy Audit Results

<b>Building</b>	<b>Additional First Cost (\$)</b>	<b>GHG Reduction (Metric Tonnes)</b>	<b>Simple Payback</b>	<b>Total Annual Savings (\$)</b>
<b>Novi Ice Arena</b>	\$128,070	276.3	6.1	<b>\$20,906</b>
<b>Civic Center</b>	\$151,361	449.9	2.5	<b>\$59,810</b>
<b>Totals</b>	<b>\$279,431</b>	<b>726.2</b>	<b>3.5</b>	<b>\$80,716</b>

# EECBG Funding: Summary

Activity	EECBG Funds	Leverage	Total Annual Savings	Summary
<b>Energy Efficiency Retrofits</b>	\$426,598	\$19,912 *	\$101,238	Retrofit eight municipal buildings and utilize a portion of the savings and optimization rebates to fund future retrofit activities
<b>Energy Efficiency and Conservation Program</b>	\$35,000	\$11,600		Develop an energy program to conduct outreach and provide tools and mechanisms to residences and businesses to conduct energy efficiency retrofits, provide community-wide impact
<b>Administration **</b>	\$23,557	\$23,557		Administration activities include tracking progress, measuring benefits and completing reporting requirements
<b>EECS Development</b>	\$47,945	\$9,450		Activity itemizes EECBG activities and is required to receive funding allocation
<b>Totals</b>	<b>\$533,100</b>	<b>\$44,607</b>	<b>\$101,238 ***</b>	

\*Utility optimization rebates used for future efficiency upgrades

\*\*Maximum amount is \$53,100

\*\*\* Savings will vary depending on the energy conservation measures selected

# CITY OF NOVI EECS DEVELOPMENT

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**AKTPEERLESS Environmental  
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