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## CENTRAL UTILITIES COMPLEX PROJECT SUMMARY REPORT

PREPARED FOR:



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Further, certain statements, findings and conclusions in the Report are based on NOVI Energy's interpretations of various rate structures and verbal information provided by General Motors and Town of Speedway subject matter experts. These interpretations of information by other agencies, legal counsel or jurisdictional body could differ.

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### ATTACHMENT

- I. Preliminary Conceptual Block Layout Diagram

## 1. EXECUTIVE SUMMARY

The Town of Speedway, Indiana is currently exploring a plan that targets the redevelopment of the blighted areas surrounding the Indianapolis Motor Speedway. With the intent to sustain continued year round revenue from tourism, a master plan is being developed by the Speedway Redevelopment Commission (SRC) and the town's planning engineers. An important part of this redevelopment involves a Central Utility Complex (CUC) that is envisioned to serve General Motors (GM) Allison Transmission Plant and any other industrial and commercial loads. The SRC seeks a win-win opportunity where by the interest of GM is retained by creating a financing environment that translates to competitive annual utility fixed costs to GM.

Accordingly, four different financing strategies are being evaluated for financing a CUC involving the Town of Speedway, GM and a third party investor. They are:

1. **Speedway Ownership:** Town of Speedway will own the CUC and finance the project. The Town will raise bond financing for the project and also provide equity. Capital costs will be financed at 80:20 debt equity ratio. Bond financing will be at 7% fixed interest rate. The lender's Debt Service Coverage Ratio (DSCR) requirement of 1.35 and positive Return on Equity (ROE) to the Town of Speedway is the boundary condition.
2. **GM Pre-Pay Option:** Town of Speedway will own the CUC and finance the project. GM will pay some upfront costs to the Town of Speedway which will support the equity portion provided by the town. GM will benefit from discounts to the annual fixed costs based on the upfront costs. Debt will be provided by the Town of Speedway through bond financing at 7% fixed interest rate.
3. **Third Party Ownership:** In this strategy, it is assumed that a third party developer will finance, own, operate and maintain the CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the Third party through Town of Speedway bond financing at a favorable interest rate.
4. **Third Party Ownership with Town Buy-Down:** In this strategy, it is assumed that a third party project development company will finance, own, operate and maintain the CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of Speedway bond financing at a favorable interest rate. Annual cost 'buy-down' by the Town of Speedway will provide necessary fixed cost discounts to GM while maintaining the expected IRR for the third party investor.

Financial evaluation reveals that while a Speedway ownership and management of the CUC will provide maximum benefits to GM, the Third Party Ownership with Town Buy-Down scenario offers the individual parties the opportunity to negotiate and agree on the fixed cost to GM.

## 2. INTRODUCTION

The Town of Speedway, Indiana incorporated in 1926 is home of the Indianapolis 500 Motor Speedway. This is a growing town that has its own governing body, town council, police, fire and utilities department. Every year the Indianapolis 500 motor speedway attracts racing aficionados and tourists from all over the country to this area during the racing season and it is observed that there is an opportunity for increased tourism revenue at the end of racing season. The Speedway Redevelopment Commission ('SRC') is currently exploring plans to develop approximately 20 acres of land adjoining the motor speedway that is stated to be blighted. It is planned to include community friendly and tourism oriented establishments such as parks, and recreational centers in this area. SRC anticipates that the overall redevelopment will appeal to tourists and serve as a source of year round sustained revenue. SRC and Town of Speedway engineers are currently developing a master plan for this redevelopment area.

The General Motors Allison Transmission Plant (the 'Plant') is one of the largest industrial facilities in the town and is located on the south side of 10<sup>th</sup> street between Cossell Rd. and Grande Ave (shown in Fig.2, next page). This Plant has been in operation since 1915 and produces engine transmission and components for military and commercial passenger vehicles. As part of this redevelopment, SRC has approached GM to develop a Central Utility Complex ('CUC') that can supply utility service requirements for the GM Plant and potentially other neighboring industrials in the area. GM is exploring the potential benefits of a CUC financed by the Town of Speedway, an independent third party development company or other sources. The Town of Speedway intends to retain the interest of one of the largest employers in town by implementing the CUC. This analysis evaluates the economic basis for constructing and operating a Central Utility Complex serving the GM Allison Transmission Plant and the neighboring industrials in the local area. This summary report utilizes conceptual design and preliminary cost estimates provided by GM.

## 3. GM ALLISON TRANSMISSION PLANT UTILITY REQUIREMENTS

The Allison Transmission plant is one of GM's large manufacturing facilities with close to 4,000 employees. Located on the south side of 10<sup>th</sup> street, the Plant occupies over 3 million square feet in area and operates all year. The Plant comprises of the Main Plant and the Military Plant manufacturing vehicle transmission and associated parts. Plant operation is supported by onsite utility generation and distribution system providing steam, chilling, compressed air and waste water treatment. GM personnel indicate that the utility generation systems are aging and require replacement in the near future. Information on the Plant utility systems, the total installed capacity as well as current utility load requirements was provided by GM personnel. Plant load information in the May'05-June'06 time frame was reviewed for this analysis.



*Fig 1: Allison Transmission Plant, Speedway IN  
Source: [www.GM.com](http://www.GM.com)*

Steam: Low pressure saturated steam at 150 psig is generated in five natural gas fired boilers. Some of the boilers are reported to be old and sparingly used. Review of steam loads provided by GM indicates annual consumption of approximately 187,000 klb of saturated steam with a peak load of 80,000 lb/hr and an average load of 22,000 lb/hr.



*Fig 2: GM Allison Transmission Plant and CUC location*

*Source: Google Maps*

Compressed air: 100 psig compressed air is supplied to the Plant process by eight electrical air compressors. Based on load information, the annual consumption is determined to be approximately 3,290,000 MCF with a peak load of 13,600 CFM and an average load of 9,000 CFM.

Waste Water Treatment Plant (WWTP): The WWTP system makes use of ultra filtration to remove and isolate elements that cannot be released to the town sewer and waste water system. The Plant load data indicates an average flow rate of approximately 34,000 gallon/ day. The data indicates maximum load on the WWTP to be in excess of 90,000 gallon/ day for a few days.

Chillers: The GM Plant utilizes 12 centrifugal chillers that are distributed and located at designated areas to handle the chilling load. Chillers number 1-3 were not linked to the central electronic metering system at the plant. Plant personnel indicate a maximum chiller load during the summer months is approximately 10,300 RT.

## 4. THE CENTRAL UTILITY COMPLEX

The Central Utility Complex is being developed to supply utility requirements primarily to the GM Allison Transmission plant and as an option to the neighboring commercial, industrial establishments. Industrial customers and commercial business entities can benefit from a central utility service plant. Replacement of their current utility systems (boilers, chillers, and compressors) with cost competitive supply from an outside source will allow these entities to eliminate the operation and maintenance of utility systems and also free up space for expansion to their mainstream process and operations.

### 4.1 DESIGN CONCEPT CHANGES & ADJUSTMENTS

Initial Concept Design: A utility plant concept and the associated cost estimates was earlier defined and developed by GM. In this initial design the utility plant was located within the GM Plant and was connected to the different utility tie points. The utility plant included steam, compressed air and waste water treatment for handling GM Plant loads. The compressed air system included two 5,000 CFM and two 2,500 CFM air compressors with a combined capacity of 15,000 CFM delivering 100 psig compressed air. The air compressor system also included cooling towers in their design. The electrical system in the utility plant was based on service from the local electric utility provider at 13.8 kV. Multiple transformers were used to step down voltage levels to 4160 V and 480 V for distribution. The electrical equipment room included the switchgear arrangement at the 4160 V and 480 V. The WWTP had a water treatment capacity of 90,000 gallon/ day. The Steam system included three 35,000 lb/hr natural gas fired boilers generating 150 psig saturated steam for process. This utility plant concept was modified and updated to accommodate the new CUC location and design changes proposed in this report.

CUC Location: The CUC will now be located on 10<sup>th</sup> street, north of the GM Allison Transmission Plant. GM currently owns this property and is using it as a vehicle parking lot for its employees (Fig 3). This location was primarily selected due to its relative proximity to the GM Plant and neighboring industrial facilities. It is envisioned that GM will sell or otherwise provide this property to the Town of Speedway for the development of the CUC.



Fig 3: Proposed CUC location

Design Changes: The following design changes were made to the initial utility plant configuration by GM. The compressed air system was revised and substituted with the compressed air system used in a similar GM project. This includes ten 1,500 CFM electric air compressors and the elimination of the cooling tower. The electrical system was revised to

remove the 4160 V electrical system and associated transformers and switchgears. These changes were based on GM interaction with equipment suppliers. The conceptual designs for steam system and waste water treatment plant were retained as per the initial utility plant design. Modifications to mechanical, civil, structural and electrical systems to support the new CUC were completed and provided by GM.

Utility Interconnections: As seen in drawing DWG M2 (attachment), CUC will be located at a distance of approximately 850 ft from the conceptual utility tie points at the Plant. The location of the tie points have not been identified at this time. GM's conceptual design for the CUC includes a trestle structure to support the various utility piping from the CUC to the Plant. The trestle structure supports compressed air piping, steam and condensate return piping and waste water supply line from the Plant to the CUC. Boiler makeup water will be supplied to the feed water system by the town water connection available at the CUC location. Discharge from the waste water treatment plant will be connected to the town sewer lines which are also available along the north side of 10<sup>th</sup> street. Preliminary discussions with Town authorities indicate that there is sufficient capacity to connect the CUC to town water and waste water systems. This location is also ideal for connection to the local natural gas utility supply provided by Citizens gas. Preliminary discussions with Indianapolis Power and Lighting (IPL), the local electric supply utility indicates that the CUC will be connected at the 34.5 kV level from a substation located west of the CUC. IPL will provide connection to their substation and make a supply line available at the CUC property line.

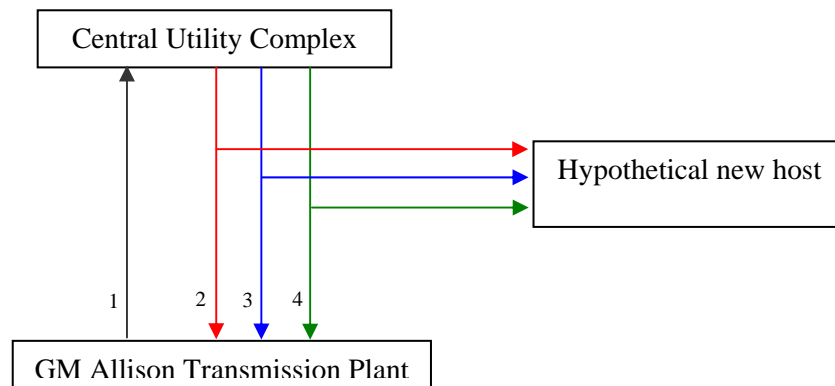
Once operational, the CUC will displace the boilers, air compressors and waste water treatment plant that is currently operating at the GM Plant. This report only includes concept level design and preliminary cost estimates developed by GM, for the CUC and associated utility distribution system. It is assumed that detailed level engineering will be completed to define specifications, understand mechanical constraints, and identify exact utility tie points and requirements among other factors that could influence the CUC design and to arrive at a more defined cost estimate.

## 4.2 CUC EVALUATION CASES

Multiple conceptual configurations are being explored as a part of this analysis report. A detailed description of the various CUC configurations and the utility supply system follows:

1. **Base Case:** The Base case scenario involves a CUC facility supplying utilities to the GM Plant only. The following utilities are supplied:
  - a. **Steam System:** The CUC will include three 35,000 lb/hr natural gas fired boilers generating saturated steam at 150 psig. The boilers will include individual economizers to utilize flue gas heat recovery for feed water preheat. It is assumed that the CUC steam system will have the same level of condensate return that is currently available at the GM Plant.

- b. **Compressed air:** Ten electrical air compressors each with a capacity of 1,500 CFM will supply 100 psig compressed air. Compressed air from the CUC will be piped and connected to the main header within the Plant.
  - c. **WWTP System:** The WWTP system at the CUC uses the same ultra filtration technology that is currently being used in the GM Plant. This new treatment plant will have a capacity of 90,000 gallons/day and the resulting treated waste water will be discharged to the town sewer system.
2. **Alternate Case 1:** Alternate Case 1 involves a CUC facility that provides all the utilities described in Base Case (steam, compressed air, WWTP) with the addition of chilled water supply to the GM Plant.
- a. **Chilled water supply system:** A total of seven 1750 RT electrical chillers provide an installed capacity of 12,250 RT. This design concept includes one spare chiller. The CUC chilled water supply line will be connected to the GM Plant chilled water main header by direct buried underground piping. For the purposes of this report, it is assumed that a pipe length of 1000 ft is sufficient to connect to the Plant's main chilled water header.
3. **Alternate Case 2:** This alternate is based on the supply of utilities to GM and a hypothetical neighboring industry. As seen in Fig 4 steam, chilling and compressed air will be supplied to a new host and the GM Plant will receive all the utilities described in Alternate Case 1.



*Fig 4: Utility supply*

- 1 – Waste water from GM Plant to CUC
- 2 – Steam
- 3 – Chilled Water
- 4 – Compressed Air

It is assumed that the hypothetical host is located approximately 1000 ft from the CUC and pipe length of 1000 ft will be used for connecting steam, chilling and compressed air systems to the new host. The following is a brief description of the utilities being supplied to the hypothetical host:

- a. **Steam System**: One additional boiler generating 35,000 lb/hr saturated steam at 150 psig will be installed to serve the new host. Steam will be supplied to this host in direct buried steam piping and condensate is returned to the CUC steam system.
  - b. **Chilling supply System**: One additional 1750 RT chiller will provide the required chilling to the new host. Direct buried piping will be used to supply to new host.
  - c. **Compressed Air System**: The CUC design will include an extra air compressor with a capacity of 1,500 CFM providing compressed air at 100 psig. Direct buried piping will be used to supply compressed air to new host.
4. **Alternate Case 3**: Alternate Case 3 reviewed a Modular Utility Plant approach. This evaluation was completed to determine space requirements within the CUC to accommodate modular utility systems. The enclosed drawing DWG M2 (attachment) shows the conceptual CUC floor plan with future addition of modular (similar capacity) boiler, chiller and compressor. This evaluation did not require financial analysis based on GM direction.
  5. **Alternate Case 4**: This option was to evaluate the utilization of land fill gas from a neighboring source in the boilers at the CUC. GM personnel's interaction with the neighboring land fill gas providers indicated that there was no viable land fill gas supply source in the neighboring areas with sufficient capacity to supply the CUC.
  6. **Alternate Case 5**: This option investigated the opportunities of synergy with Praxair. GM management visited Praxair's facility to understand the availability of excess compressed air that could be sold to the GM Plant. Discussions and interactions revealed that Praxair did not have additional excess capacity available to support the GM Plant.

## 5. PROJECT COST ESTIMATES

The initial utility plant cost estimates developed by GM formed the basis for capital costs for the various cases. These estimates were modified by GM and NOVI personnel to accommodate the CUC configurations and changes to mechanical, civil, structural and electrical systems. GM also provided cost estimates for chillers in Alternate Case 1. Annual Operation and Maintenance (O&M) cost estimate provided by GM includes O&M charges on installed equipment and salaries for operating personnel. Annual O&M on installed equipment is estimated at 3% of capital cost. It was estimated that the CUC will employ 8 full time employees that include 7 operating staff at \$ 100,000 per annum and one plant manager at \$ 150,000 per annum. CUC construction cost estimates and union labor costs were updated to reflect more recent hourly labor charges. The following table documents the different CUC configurations and their associated costs.

Cases	Description	Cap Cost \$	Annual O&M
Base Case – Supply to GM Plant only	Steam, Compressed air and Waste Water Treatment	20,400,000	1,640,000
Alt Case 1 – Supply to GM Plant only	Utilities in base case (Steam, Compressed air, Waste Water treatment) plus Chilling	49,200,000	2,500,000
Alt Case 2 – Supply to GM and New Host	Steam, Chilling, Compressed air and WWTP to GM; Steam, Chilling and Compressed air to new host	55,200,000	2,700,000

*Table 1: CUC Project Cost Estimates*

As documented in Section 4.0, project specific engineering will need to be completed to obtain more definite and defined project cost estimates. It is assumed that the Town of Speedway will procure the proposed land from GM at no cost to the project.

Applicable Utility Tariffs: The following tariff charges were determined from Town of Speedway utility suppliers. The actual tariff applicable for the utility supply may vary from the information determined at this time based on additional discussions and negotiations.

### **Electric Power:** Indianapolis Power and Lighting Company

#### Demand Charge

First 4,000 kW	\$10.95 /kW
Over 4,000 kW	\$10.60 /kW

#### Energy Charge

Base Charge	\$0.0199 /kWh
Fuel and other adjustments	\$0.011378 /kWh
Total Energy Charge	\$0.031278 /kWh

Since GM desires the CUC to be serviced by redundant 34.5 kV supply, an additional monthly charge of \$16,500 to \$33,000 will be applicable.

**Natural Gas:** Citizens Gas

To obtain natural gas fuel charge for the CUC, the project team will need to get into detailed discussions with Citizens Gas. A spot market price of 9.58 \$/MMBtu was obtained from GM Plant personnel on June 14, 2006.

**City Water Supply:** Town of Speedway Water Department

First 10,000 gallons	2.82 \$/ kgallon
Next 15,000 gallons	2.30 \$/ kgallon
Next 75,000 gallons	1.64 \$/ kgallon
Next 750,000 gallons	1.32 \$/ kgallon

**Waste Water Disposal:** Town of Speedway Water Department

First 25,000 gallons	2.73 \$/ kgallon
Next 75,000 gallons	2.67 \$/ kgallon

The financial analysis in this report calculates GM's annual fixed costs, and all variable costs will be a direct pass through. The tariff information is being presented to provide an estimate for future planning. Additional discussion will be necessary with the individual utility to determine the actual tariffs.

## 6. FINANCIAL ANALYSIS

Development of the CUC targets a win-win opportunity for GM and the Town of Speedway. Town of Speedway is interested in retaining the interests of one its largest employers, and GM is exploring the benefits to a new utility system financed by other entities as explained in this section. Four financing strategies were evaluated for the three CUC configurations using GM provided cost estimates. They are:

1. **Speedway Ownership:** Town of Speedway will own the CUC and finance the project. The Town will raise bond financing for the project and also provide equity. Capital costs will be financed at 80:20 debt equity ratio. Bond financing will be at 7% fixed interest rate. The lender's Debt Service Coverage Ratio (DSCR) requirement of 1.35 and positive Return on Equity (ROE) to the Town of Speedway is the boundary condition.
2. **GM Pre-Pay Option:** Town of Speedway will own the CUC and finance the project. GM will pay some upfront costs to the Town of Speedway as a part of contractual obligations. This will support the equity portion provided by the town. GM will benefit from discounts to the annual fixed costs based on the upfront costs. Debt will be provided by the Town of Speedway through bond financing at 7% fixed interest rate.
3. **Third Party Ownership:** In this strategy, it is assumed that a third party developer will finance, own, operate and maintain the CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the Third party through Town of Speedway bond financing at a favorable interest rate.
4. **Third Party Ownership with Town Buy-Down:** In this strategy, it is assumed that a third party development company will finance, own, operate and maintain the CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of Speedway bond financing at a favorable interest rate. Annual cost 'buy-down' by the Town of Speedway will provide necessary fixed cost discounts to GM while maintaining the expected IRR for the third party investor.

All variable expenses associated with the CUC relating to fuel, electric and other commodities will be a direct pass through to GM and have been excluded in determining the total fixed costs to GM. This financial analysis was performed to determine the annual fixed charges associated with the CUC. Detailed evaluation and results follows:

## 6.1 BASE CASE EVALUATION

In the Base Case CUC configuration Steam, Compressed air and WWTP is supplied to the GM Plant only.

### I. SPEEDWAY OWNERSHIP

This strategy investigates project economics based on the Town of Speedway Ownership of the CUC. The town will raise bond financing for the project and also provide equity. A fixed interest rate of 7% on the bond financing is assumed.

#### Financial Assumptions

<b>Capital Cost Details</b>	
Base Capital Cost	\$20,344,000
Financing Costs & Bond Issuance	\$436,654
Interest During Construction	\$1,052,025
<b>Total Capital Costs</b>	<b>21,832,678</b>

<b>O&amp;M Cost Details</b>	
Annual O&M cost (\$MM)	1.6
Number of months of construction	18

<b>Debt Funding</b>	
Amount	\$17,466,143
Debt Tenor (years)	20
Debt Interest Rate	7.00%
Financing Fees	2.50%
Return on Equity	13.00%

<b>Financing Pattern</b>		
Debt	80%	\$17,466,143
Equity	20%	\$4,366,536
Total	100%	\$21,832,678

<b>Taxes &amp; Rates</b>	
Property Taxes	0.00%
Income Taxes	30.00%
Inflation Rate	2.50%

The analysis was completed to determine a fixed cost structure for GM while maintaining an average DSCR of 1.35 according to lender requirement. The Town of Speedway only expects that the project results in positive ROE. In order to meet the lender's DSCR threshold of 1.35, the minimum ROE for the project is set at 13%. This results in an IRR of 11%.

Summary Results

	Speedway Ownership
<b>DSCR</b>	
Minimum	1.35
Average	1.35
<b>IRR</b>	11.00%
<b>Fixed Charge (\$ MM)</b>	
Average per year	4.4
Over 20 years	88.6

The average annual fixed charge is calculated to be \$ 4.4MM. The annual fixed charge is computed to recover the debt service, taxes, fixed O&M expenses and return on equity. The average annual debt service is approximately \$1.6 MM, the average fixed O&M expenses are approximately \$2.1 MM, and return on equity is approximately \$0.6 MM. Thus the average annual fixed charges without the fixed O&M expenses would be approximately \$2.3 MM.

II. GM PRE-PAY OPTION:

In this scenario it is assumed that GM contributes \$ 5MM to the Town of Speedway as a part of the pre-pay agreement which will support the equity portion provided by the town. This \$5MM equity contribution equates to 23% of total capital costs. Hence, the capital cost will be financed at 77:23 debt to equity ratio. GM will receive annual discounts of \$ 800,000 on the annual fixed charges for the first 10 years which will offset the pre pay amount.

Financial Assumption

<b>Capital Cost Details</b>		
Base Capital Cost		\$20,344,000
Financing Costs & Bond Issuance		\$419,925
Interest During Construction		\$1,050,366
<b>Total Capital Costs</b>		<b>21,814,291</b>
<b>O&amp;M Cost Details</b>		
Annual O&M cost	\$ MM	1.6
Number of months of construction		18

<b>Debt Funding</b>		
Amount		\$16,797,004
Debt Tenor (years)		20
Debt Interest Rate		7.00%
Financing Fees		2.50%
Return on Equity		16.00%

<b>Financing Pattern</b>		
Debt	77%	\$16,797,004
Equity	23%	\$5,017,287
Total	100%	\$21,814,291

<b>Taxes &amp; Rates</b>		
Property Taxes		0.00%
Income Taxes		30.00%
Inflation Rate		2.50%

NOTE: The equity portion of the costs changes from 20% as seen in other options, to 23% based on GM's contribution of \$5 MM for this option only.

Summary Results

	GM Option
<b>DSCR</b>	
Minimum	0.99
Average	1.24
<b>IRR</b>	3.00%
<b>Fixed Charges (\$ MM)</b>	
Average per year	4.10
Over 20 years	82.2

As seen from the table above the discount offered to GM results in the minimum DSCR value of 0.99 which will not be acceptable. Sensitivity analysis was completed to understand the impact on fixed costs and ROE when the average DSCR is raised to a value of 1.37.

II a. GM PRE-PAY OPTION (Revised ROE):

In order to maintain an average DSCR of 1.37, the ROE increases from 16% to 20%. The financial summary is as follows:

	GM Option IIa
<b>ROE</b>	20%
<b>DSCR</b>	
Minimum	1.12
Average	1.37
<b>IRR</b>	7.00%
<b>Fixed Charges (\$ MM)</b>	
Average per year	4.4
Over 20 years	87.9

The average annual fixed charge is calculated to be \$ 4.4 MM. This result provides an annual fixed charge to GM that is comparable to the town ownership financing strategy. The average annual fixed O&M expenses will be approximately \$2.1 MM.

### III. THIRD PARTY OWNERSHIP

It is assumed that a third party developer will finance, own, operate and maintain CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of Speedway bond financing at a favorable interest rate.

#### Financial assumption

<b>Capital Cost Details</b>	
Base Capital Cost	\$20,344,000
Financing Costs & Bond Issuance	\$436,654
Interest During Construction	\$1,052,025
<b>Total Capital Costs</b>	<b>21,832,678</b>

<b>O&amp;M Cost Details</b>	
Annual O&M Cost (\$MM)	1.6
Number of months of Construction	18

<b>Debt Funding</b>	
Amount	\$17,466,143
Debt Tenor (years)	20
Debt Interest Rate	7.00%
Financing Fees	2.50%
Return on Equity	17.00%
<b>Financing Pattern</b>	
Debt	80%
Equity	20%
Total	100%
<b>Taxes &amp; Rates</b>	
Property Taxes	2.00%
Income Taxes	30.00%
Inflation Rate	2.50%

#### Summary Results

	Third Party Ownership
<b>DSCR</b>	
Minimum	1.45
Average	1.46
<b>IRR</b>	15%
<b>Fixed Charges (\$ MM)</b>	
Average per year	5.1
Over 20 years	101.8
<b>Annual Property Taxes</b>	0.4

The average annual fixed charge is calculated to be \$ 5.1 MM. As seen in the table above, with an average DSCR of 1.46 and IRR of 15%, the ROE is 17%. The average annual fixed O&M expenses will be approximately \$2.1 MM. The CUC will pay an annual property tax of \$400,000 to the town.

IV. THIRD PARTY OWNERSHIP WITH TOWN BUY-DOWN

Financial structure with Speedway ownership and third party ownership presents the lowest and highest average annual fixed costs to GM. This option evaluates GM's fixed costs based on third party ownership with town buy down while maintaining IRR expectation.

A third party developer will finance, own, operate and maintain the CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of Speedway bond financing at a favorable interest rate. The summary results table shows a range of annual cost 'buy-down' by the Town of Speedway and the associated fixed cost discounts to GM while maintaining the expected IRR for the third party investor.

Financial assumption

<b>Capital Cost Details</b>		
Base Capital Cost		\$20,344,000
Financing Costs & Bond Issuance		\$436,654
Interest During Construction		\$1,052,025
<b>Total Capital Costs</b>		<b>21,832,678</b>
<b>O&amp;M Cost Details</b>		
Annual O&M Cost (\$MM)		1.6
Number of months of Construction		18
<b>Debt Funding</b>		
Amount		\$17,466,143
Debt Tenor (years)		20
Debt Interest Rate		7.00%
Financing Fees		2.50%
Return on Equity		17.00%
<b>Financing Pattern</b>		
Debt	80%	\$17,466,143
Equity	20%	\$4,366,536
Total	100%	\$21,832,678
<b>Taxes &amp; Rates</b>		
Property Taxes		2.00%
Income Taxes		30.00%
Inflation Rate		2.50%

The guarantee required to be provided by the city and the financial summary compared to the previous financing scenario involving a third party is seen here:

## Summary Results

	Third Party with Town buy down		
<b>Town buy down (\$ MM)</b>	0	0.5	1
<b>Fixed Charge (\$ MM)</b>			
Average per year	5.10	4.60	4.10
Over 20 years	101.8	91.8	81.8
<b>Discount (%)</b>	-	9.8%	19.6%
<b>DSCR</b>			
Minimum	1.45	1.45	1.45
Average	1.46	1.46	1.46
<b>IRR</b>	15%	15%	15%
<b>Annual Property Tax</b>	0.4	0.4	0.4

The annual property taxes payable to the City is assumed to be 2%. Thus the discount on GM's annual fixed costs varies from 0 to 20% based on town buy down range of 0 to \$1MM, while maintaining IRR of 15%.

## 6.2 ALTERNATE CASE 1

In this CUC configuration, Steam, Compressed air, WWTP and Chilling is supplied to the GM Plant only. The following analysis is completed on the incremental Chiller plant costs.

### I. SPEEDWAY OWNERSHIP

As mentioned earlier, CUC will be owned and operated by the Town of Speedway. The Town will raise bond financing for the project and also provide equity. In order to meet the lenders DSCR threshold requirement of 1.35, the minimum ROE required for the project is 13%. This results in an IRR of 11%. The fixed charge for Chiller is provided in the column 'Chillers' and represent recovery on the incremental \$30.9 MM investment.

#### Financial Assumptions

<b>Capital Cost Details</b>	Base Case	Incremental Chiller	
Capital Cost	\$20,344,000	\$28,826,200	
Financing Costs & Bond Issuance	\$436,654	\$618,711	
Interest During Construction	\$1,052,025	\$1,490,655	
<b>Total Capital Costs</b>	<b>\$21,832,678</b>	<b>\$30,935,566</b>	
<b>O&amp;M Cost Details</b>			
O&M Cost (\$MM)	1.6	0.9	
<b>Debt Funding</b>			
Amount	\$17,466,143	\$24,748,453	
Debt Tenor (years)	20	20	
Debt Interest Rate	7.00%	7.00%	
Financing Fees	2.50%	2.50%	
Return on Equity	13.00%	13.00%	
<b>Financing Pattern</b>			
Debt	80%	\$17,466,143	\$24,748,453
<u>Equity</u>	<u>20%</u>	<u>\$4,366,536</u>	<u>\$6,187,113</u>
Total	100%	\$21,832,678	\$30,935,566
<b>Taxes &amp; Rates</b>			
Property Taxes		0.00%	
Income Taxes		30.00%	
Inflation Rate		2.50%	

Summary Results

	Speedway Ownership		
	Base Case (steam, comp air, WWTP to GM)	Chillers (Chilled water to GM)	Total (Base case + Chiller)
<b>DSCR</b>			
Minimum	1.35	1.35	
Average	1.35	1.35	
<b>IRR</b>	11%	11%	
<b>Fixed Charges (\$MM)</b>			
Average per year	4.4	4.2	8.6
Over 20 years	88.6	83.9	172.6

The fixed charges for the chiller option is lower compared to the Base Case because the incremental O&M for the chiller does not include plant personnel labor charges. The average annual fixed O&M expenses are approximately \$1.1 MM.

## II. GM PRE-PAY OPTION

In this scenario GM contributes \$5MM as seen in the Base case and an additional \$7MM towards the chilling supply which will support the equity portion provided by the town. The \$5MM contributes to 23% of base case capital cost and \$ 7MM equity contribution equates to 23% of incremental capital costs. Hence, the capital costs will be financed at 77:23 debt to equity ratio. GM will receive total annual discounts of \$ 2MM on the total annual fixed charges for the first 10 years. The fixed charges for the chillers are provided in the column ‘Chiller’ and represent recovery on the incremental \$30.9 MM investment as well as the O&M expenses.

<b>Capital Cost Details</b>	Base Case	Incremental Chiller
Capital Cost	\$20,344,000	\$28,826,200
Financing Costs & Bond Issuance	\$419,925	\$595,008
Interest During Construction	\$1,050,366	\$1,488,304
<b>Total Capital Costs</b>	<b>21,814,291</b>	<b>30,909,512</b>
<b>O&amp;M Cost Details</b>		
Annual O&M cost	1.6	0.9

<b>Debt Funding</b>		
Amount	\$16,797,004	\$23,800,324
Debt Tenor (years)	20	20
Debt Interest Rate	7.00%	7.00%
Financing Fees	2.50%	2.50%
Return on Equity	16.00%	16.00%

<b>Financing Pattern</b>			
Debt	77%	\$16,797,004	\$23,800,324
Equity	23%	\$5,017,287	\$7,109,188
Total	100%	\$21,814,291	\$30,909,512

<b>Taxes &amp; Rates</b>	
Property Taxes	0%
Income Taxes	30.00%
Inflation Rate	2.50%

NOTE: The equity portion of the costs changes from 20% as seen in other options, to 23% based on GM’s contribution of \$5 MM in base case and \$ 7 MM for the chiller portion of this evaluation only.

Summary Results

	GM Option		
	Base Case (steam, comp air, WWTP to GM)	Chillers (chilled water to GM)	Total (Base case + Chiller)
<b>DSCR</b>			
Minimum	0.99	0.99	
Average	1.24	1.24	
<b>IRR</b>	3%	3%	
<b>Fixed Charges (\$MM)</b>			
Average per year	4.1	3.9	8.0
Over 20 years	82.2	77.3	159.5

As seen from the table the discount offered to GM results in the minimum DSCR value of 0.99 which will not be acceptable. Sensitivity analysis was completed to understand the impact on tariff and ROE when the average DSCR is raised to a value of 1.37.

II a. GM PRE-PAY OPTION (Revised ROE)

In order to maintain an average DSCR of 1.37, the ROE increases from 16% to 20%. The financials and fixed costs are as follows:

	GM Option IIa		
	Base Case (steam, comp air, WWTP to GM)	Chillers (chilled water to GM)	Total (Base case + Chiller)
<b>ROE</b>	20%	20%	
<b>DSCR</b>			
Minimum	1.12	1.12	
Average	1.37	1.37	
<b>IRR</b>	7%	7%	
<b>Fixed Charges (\$MM)</b>			
Average per year	4.4	4.1	8.5
Over 20 years	87.9	83	170.9

The average annual fixed charges would be approximately \$3.0 MM without the annual fixed O&M expenses. The average annual fixed O&M expenses will be approximately \$1.1 MM. This result provides an annual fixed charge to GM that is comparable to the town ownership financing strategy.



### III. THIRD PARTY OWNERSHIP

It is assumed that a third party developer will finance, own, operate and maintain CUC. Equity will be provided by the third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of Speedway bond financing at a favorable interest rate. It is seen that to obtain an IRR of 15%, the ROE required is 17%. The fixed charges for the chillers are provided in the column 'Chiller' and represent recovery on the incremental \$30.9 MM investment as well as the O&M expenses.

#### Financial assumption

<b>Capital Cost Details</b>	Base Case	Incremental Chiller
Capital Cost	\$20,344,000	\$28,826,200
Financing Costs & Bond Issuance	\$436,654	\$618,711
Interest During Construction	\$1,052,025	\$1,490,655
<b>Total Capital Costs</b>	<b>21,832,678</b>	<b>\$ 30,935,566</b>

<b>O&amp;M Cost Details</b>		
Annual O&M Cost	1.6	0.9

<b>Debt Funding</b>		Base Case	Incremental Chiller
Amount		\$17,466,143	\$28,826,200
Debt Tenor (years)		20	20
Debt Interest Rate		7.00%	7.00%
Financing Fees		2.50%	2.50%
Return on Equity		17.00%	17.00%
<b>Financing Pattern</b>			
Debt	80%	\$17,466,143	\$24,748,453
Equity	20%	\$4,366,536	\$6,187,113
Total	100%	\$21,832,678	\$30,935,566
<b>Taxes &amp; Rates</b>			
Property Taxes		2.00%	2.00%
Income Taxes		30.00%	30.00%
Inflation Rate		2.50%	2.50%

Summary Results

	Third Party Ownership		
	Base Case (steam, comp air, WWTP to GM)	Chillers (chilled water to GM)	Total (Base case + Chiller)
<b>DSCR</b>			
Minimum	1.45	1.45	
Average	1.46	1.46	
<b>IRR</b>	15%	15%	
<b>Fixed Charges (\$ MM)</b>			
Average per year	5.1	5	10.1
Over 20 years	101.8	100.4	202.2
<b>Annual Property Taxes</b>	0.4	0.6	1

The average annual fixed charge is calculated to be \$ 5 MM. As seen in the table above, with an average DSCR of 1.46 and IRR of 15%, the ROE is 17%. The average annual fixed O&M expenses will be approximately \$1.1 MM for the Chiller portion. The CUC will pay an annual property tax of \$600,000 to the town. Note that these charges are in increment to the base case charges.

IV. THIRD PARTY OWNERSHIP WITH TOWN BUY-DOWN

Financial cases with Speedway ownership and Third party ownership presents the lowest and highest average annual fixed costs to GM. This option evaluates GM's fixed costs based on third party ownership with town buy down

A third party development company will finance, own, operate and maintain the CUC. Equity will be provided by a third party developer with an IRR expectation of 15%. Debt will be available for the third party through Town of speedway bond financed at a favorable interest rate. The summary results table shows a range of annual cost 'buy-down' by the Town of Speedway and the associated fixed cost discounts to GM while maintaining the expected IRR for the third party investor. The fixed charges for the chillers are provided in the column 'Chillers' and represent recovery on the incremental \$30.9 MM investment. The financial summary compared to Case III is as follows:

Financial assumption

<b>Capital Cost Details</b>	Base Case	Incremental Chiller
Capital Cost	\$20,344,000	\$28,826,200
Financing Costs & Bond Issuance	\$436,654	\$618,711
Interest During Construction	\$1,052,025	\$1,490,655
<b>Total Capital Costs</b>	<b>21,832,678</b>	<b>30,935,566</b>

<b>Debt Funding</b>		
Amount	\$17,466,143	\$28,826,200
Debt Tenor (years)	20	20
Debt Interest Rate	7.00%	7.00%
Financing Fees	2.50%	2.50%
Return on Equity	17.00%	17.00%
<b>Financing Pattern</b>		
Debt	80%	\$17,466,143
Equity	20%	\$4,366,536
Total	100%	\$21,832,678
		\$30,935,566
<b>Taxes &amp; Rates</b>		
Property Taxes	2.00%	2.00%
Income Taxes	30.00%	30.00%
Inflation Rate	2.50%	2.50%

Summary Results

	Third Party with Town buy down								
	Base Case	Chiller	Total	Base Case	Chiller	Total	Base Case	Chiller	Total
<b>Town buy down (\$ MM)</b>	0	0	0	0.5	0.5	1	1	1	2
<b>Fixed Charge (\$ MM)</b>									
Average per year	5.10	5.0	10.1	4.60	4.50	9.1	4.10	4.0	8.2
Over 20 years	101.8	100.4	202.2	91.8	90.4	182.2	81.8	80.4	162.2
<b>Discount (%)</b>				9.8%			19.6%		
<b>DSCR</b>									
Minimum	1.45	1.45		1.45	1.45		1.45	1.45	
Average	1.46	1.46		1.46	1.46		1.46	1.46	
<b>IRR</b>	15%	15%		15%	15%		15%	15%	
<b>Annual Property Tax</b>	0.4	0.6	1	0.4	0.6	1	0.4	0.6	1

The annual property taxes payable to the Town is assumed to be 2%. Thus the discount on GM’s annual fixed costs for the Chiller portion of the CUC varies from 0 to 20% based on town buy down range of 0 to \$1MM, while maintaining IRR of 15%. Note that these charges are incremental to the Base case charges.

### 6.3 ALTERNATE CASE 2

In this CUC configuration, Steam, Compressed air, WWTP and Chilling is supplied to the GM Plant and steam, compressed air and chilling is supplied to a hypothetical new host. The following analysis is completed on the plant costs incremental to the Chiller plant as documented in Alternate Case 1.

#### I. SPEEDWAY OWNERSHIP

As mentioned earlier, CUC will be owned and operated by the Town of Speedway. Here the project includes supply to a new host for steam, compressed air & water. The Town will raise bond financing for the project and also provide equity. In order to meet the lenders DSCR threshold requirement of 1.35, the minimum ROE required for the project is 13%. This results in an IRR of 11%. The fixed charges provided in the column New Host and represent recovery on the incremental \$6.46 MM investment.

#### Financial Assumptions

<b>Capital Cost Details</b>	Base Case	Incremental Chiller	Incremental New Host
Capital Cost	\$20,344,000	\$28,826,200	\$6,021,775
Financing Costs & Bond Issuance	\$436,654	\$618,711	\$129,248
Interest During Construction	\$1,052,025	\$1,490,655	\$311,397
<b>Total Capital Costs</b>	<b>\$21,832,678</b>	<b>\$30,935,566</b>	<b>\$6,462,420</b>
<b>O&amp;M Cost Details</b>			
O&M Cost (\$MM)	1.6	0.9	0.2

<b>Debt Funding</b>			
Amount	\$17,466,143	\$24,748,453	\$5,196,936
Debt Tenor (years)	20	20	20
Debt Interest Rate	7.00%	7.00%	7%
Financing Fees	2.50%	2.50%	2.50%
Return on Equity	13.00%	13.00%	13.00%

<b>Financing Pattern</b>				
Debt	80%	\$17,466,143	\$24,748,453	\$5,169,936
Equity	<u>20%</u>	<u>\$4,366,536</u>	<u>\$6,187,113</u>	<u>\$1,292,484</u>
Total	100%	\$21,832,678	\$30,935,566	\$6,462,420

<b>Taxes &amp; Rates</b>			
Property Taxes			0%
Income Taxes			30.00%
Inflation Rate			2.50%

Summary Results

	Speedway Ownership			
	Base Case (steam, comp air, WWTP to GM)	Chillers (chilled water to GM)	New Host (steam, WWTP and chilled water to new host)	Total
<b>DSCR</b>				
Minimum	1.35	1.35	1.35	
Average	1.35	1.35	1.35	
<b>IRR</b>	11%	11%	11%	
<b>Fixed Charges (\$MM)</b>				
Average per year	4.4	4.2	0.9	9.5
Over 20 years	88.6	83.9	17.5	190

The incremental fixed cost is calculated to be \$0.9 MM. The incremental O&M for the new host does not include plant personnel labor charges. The average annual fixed O&M expenses would be approximately \$ 0.2 MM.

II. GM PRE PAY OPTION

This was not evaluated since GM would not be expected to fund the investment to support a new host.

### III. THIRD PARTY OWNERSHIP

It is assumed that a third party developer will finance, own, operate and maintain CUC. Debt is from Speedway bond financed money and the third party would expect an IRR of 15%. It is seen that to obtain an IRR of 15%, the ROE required is 17%. The fixed charges for the all the three utilities – chilled water, steam and compressed air are provided in the column ‘New Host’ and represent recovery on the incremental \$6.46 MM investment. The financial summary is:

<b>Capital Cost Details</b>	Base Case	Incremental Chiller	Incremental New Host
Capital Cost	\$20,344,000	\$28,826,200	\$6,021,775
Financing Costs & Bond Issuance	\$436,654	\$618,711	\$129,248
Interest During Construction	\$1,052,025	\$1,490,655	\$311,397
<b>Total Capital Costs</b>	<b>\$21,832,678</b>	<b>\$30,935,566</b>	<b>\$6,462,420</b>
<b>O&amp;M Cost Details</b>			
O&M Cost (\$MM)	1.6	0.9	0.2

<b>Debt Funding</b>			
Amount	\$17,466,143	\$24,748,453	\$5,196,936
Debt Tenor (years)	20	20	20
Debt Interest Rate	7.00%	7.00%	7%
Financing Fees	2.50%	2.50%	2.50%
Return on Equity	17.00%	17.00%	17.00%

<b>Financing Pattern</b>				
Debt	80%	\$17,466,143	\$24,748,453	\$5,196,936
<u>Equity</u>	<u>20%</u>	<u>\$4,366,536</u>	<u>\$6,187,113</u>	<u>\$1,292,482</u>
Total	100%	\$21,832,678	\$30,935,566	\$6,462,420

<b>Taxes &amp; Rates</b>	
Property Taxes	2.00%
Income Taxes	30.00%
Inflation Rate	2.50%

Summary Results

	Third Party Ownership			
	Supply to GM	Chillers	New Host	Total
<b>DSCR</b>				
Minimum	1.45	1.45	1.45	
Average	1.46	1.46	1.46	
<b>IRR</b>	15%	15%	15%	
<b>Fixed Charges (\$MM)</b>				
Average per year	5.1	5.0	1	11.1
Over 20 years	101.8	100.4	21	223.1
Property Taxes	0.4	0.6	0.1	1.1

As seen in the table above, with an average DSCR of 1.46 and IRR of 15%, the ROE is 17%. The incremental average annual fixed charge is \$1MM. The average annual fixed O&M expenses would be approximately \$ 0.2 MM.

IV. THIRD PARTY OWNERSHIP WITH TOWN BUY-DOWN

This option was not evaluated since it is assumed that the Town of Speedway would not be interested in subsidizing the fixed charges for a new host.

## 6.4 ANALYSIS SUMMARY RESULTS

The following parameters were used in the financial analyses:

Parameters	
Debt Tenor (years)	20
Debt Interest Rate %	7.0
Financing Fees %	2.5
Debt %	80
Equity %	20

The following summary table captures GM’s average annual fixed costs for the various CUC cases and financing options evaluated.

Financing Option	Base Case (steam, compressed air and WWTP to GM)				Case I (Base Case + chilled water)				Case II			
	Avg. annual fixed charges (MM)	DSCR		ROE %	Avg. annual fixed charge (MM)	DSCR		ROE %	Avg. annual fixed charge (MM)	DSCR		ROE %
		min	avg			min	avg			min	avg	
<b>Speedway Ownership</b>	4.4	1.35	1.35	13	8.6	1.35	1.35	13	9.5	1.35	1.35	13
<b>GM Pre-Pay *</b>	4.4	1.12	1.37	20	8.5	1.12	1.37	20	-	-	-	-
<b>Third Party Ownership</b>	5.1	1.45	1.46	17	10.1	1.45	1.46	17	11.1	1.45	1.46	17
<b>Third Party with town buy down (0.5 MM buy down)</b>	4.6	1.45	1.46	17	9.1	1.45	1.46	17	-	-	-	-

\* - Note that the GM Pre-Pay option has a debt to equity ratio of 77:23. This corresponds to a \$ 5 MM in up front payment in the Base Case CUC configuration and a \$ 7 MM in upfront payment in Case I CUC configuration.

## 7. CONCLUSION AND NEXT STEPS

A variety of financing alternatives for the different CUC configurations were evaluated. To create a financing environment that results in a win-win opportunity for the Town of Speedway and GM, additional strategic discussions are necessary. Financial analysis indicates that the Base case CUC configuration with Speedway Ownership provides the lowest average annual fixed costs to GM. However, discussions with the Town of Speedway have indicated interest in the Third Party Ownership option. It is a recommendation that GM and the Town of Speedway engage in discussions to determine the optimum structuring option. A potential win-win scenario could emerge through the use of Option IV, which is Third Party Ownership with Town Buy-Down.

Once the financing strategy has been established and the project requirements have been identified, formal engineering and specific construction cost estimating should be completed to define project economics. Typical next steps are to agree to the terms of an Energy off-take agreement, define and execute an MOU and further develop the project and a definitive agreement. This definitive agreement will define the terms of a relationship and obligations of the parties with respect to the Central Utility Complex.



