



# **Analysis of Energy Options at Harborview Medical Center**

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## **Executive Summary**

The proposed redevelopment of Harborview Hall provides King County the opportunity to assess its energy options for the Harborview Medical Center with a focus on providing on-site redundancy while decreasing both costs and greenhouse gas emissions. Our analysis found that while the option to provide an on-site central utility plant meets these three objectives, Seattle Steam's recent rate proposal presents challenges.

## King County Auditor's Office

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# Harborview Energy Conversion Study, Phase 2

Analysis of Energy Options at  
Harborview Medical Center

July 22, 2014

# Summary of findings

- Advantages to both remain on Seattle Steam and have on-site utility plant
- Risks of continuing to purchase energy from current provider
- Infrastructure could be built to provide future flexibility

# Why we did this work

- 2013 budget proviso, Auditor's Office to review:
  - County's past energy conversion projects (Phase I)
  - Proposals for Harborview Campus (Phase II)

# Harborview energy conversion audit background

- Harborview currently purchases steam from Seattle Steam
  - Lack of on-site redundancy
  - Cost
- FMD proposed renovation of Harborview Hall includes option for local utility plant

# Status of Harborview Hall project

- Sabey selected as prime contractor and McKinstry was subcontractor
- Project design is nearly complete
- Legislation for County Council review should be transmitted soon

# Options reviewed

- Options we reviewed were:
  - Sabey/McKinstry proposal to build on-site central utility plant
  - Seattle Steam proposal

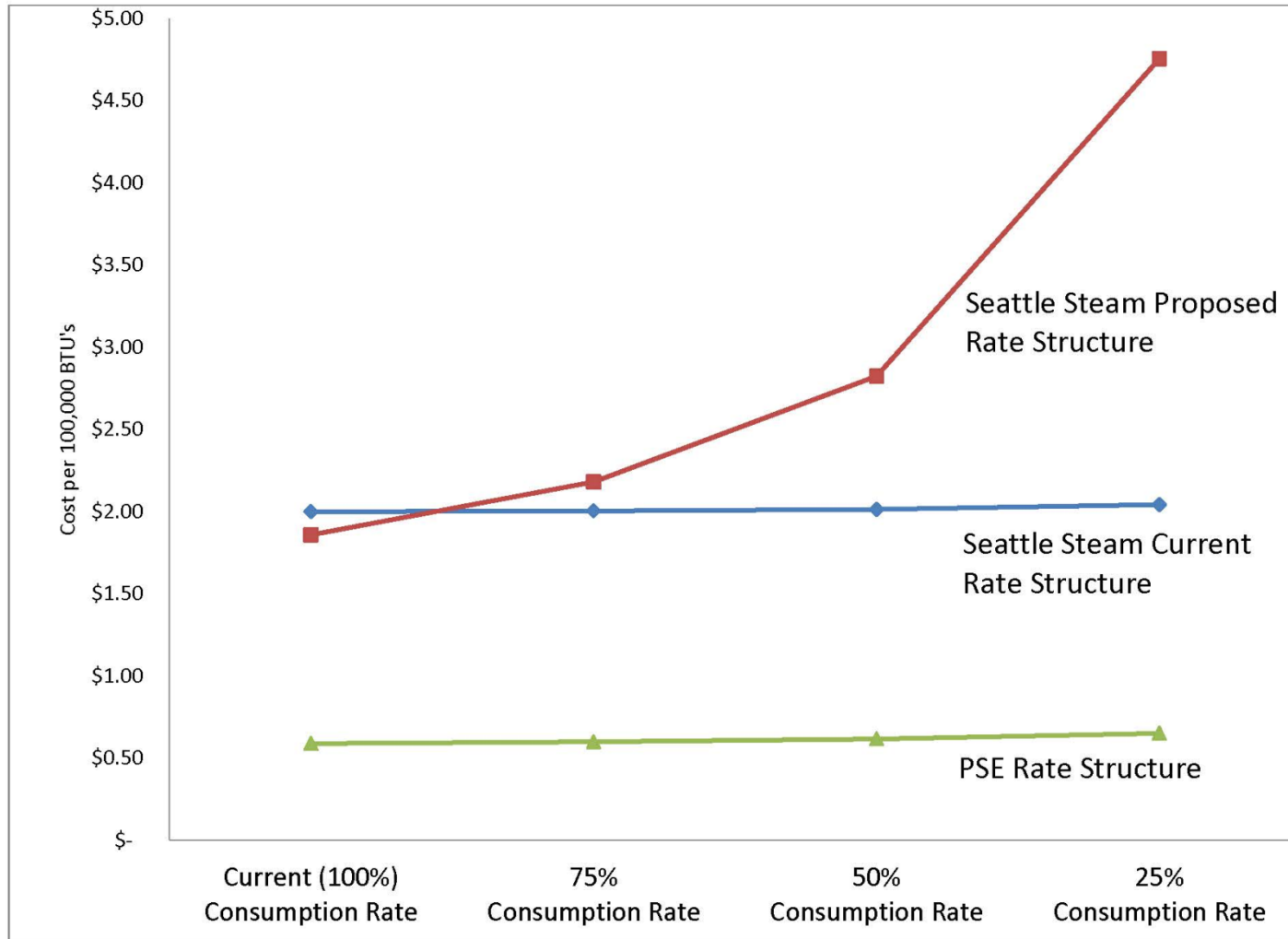
# Sabey/McKinstry proposal

- Installation of four 800-horsepower boilers in the basement of redeveloped Harborview Hall
- Provide heat and hot water for 65% of HMC campus
- Capacity to power all critical systems on HMC campus

# Sabey/McKinstry: Impact of new rate structure

- Sabey/McKinstry central utility plant would result in Seattle Steam serving 35% of campus
- New rate structure would result in substantially higher costs if Harborview reduces use of Seattle Steam service

# Sabey/McKinstry: Impact of new rate structure



# Sabey/McKinstry: Impact of new rate structure

- Seattle Steam rates not regulated
- Risks of relying on an unregulated utility

# Seattle Steam proposal

- Install, own, and operate a backup boiler
- Redesigned cost structure
- Guarantee reduction in carbon emissions achieved by burning biomass
- County supplies infrastructure to support backup boiler

# FMD's evaluation of Seattle Steam proposal

- Unsolicited and outside of competitive process
- No compelling reason to consider
- Multiple vendors
- No flexibility
- FMD alternative – Harborview remains on Seattle Steam, County constructs minimum on-site boiler capacity for redundancy plus infrastructure necessary for future expansion

# Impact of alternatives on HMC costs

<b>Sabey/McKinstry central utility plant assuming current steam rate</b>	<b>Sabey/McKinstry central utility plant assuming new steam rate</b>	<b>Minimum redundancy plus infrastructure</b>
Saves Harborview \$1.2 million over 30 years	Costs Harborview \$16.1 million over 30 years	Costs Harborview \$7.3 million over 30 years

# Impact on greenhouse gas emissions

<b>Sabey/McKinstry central utility plant</b>	<b>Minimum redundancy plus infrastructure</b>
<p data-bbox="73 596 937 654"><b>6,616 metric tonnes annually</b></p> <p data-bbox="112 749 898 878">Reduction of more than 1,260 metric tonnes</p>	<p data-bbox="989 596 1850 654"><b>5,753 metric tonnes annually</b></p> <p data-bbox="1027 749 1812 1035">Reduction of more than 2,120 metric tonnes compared to status quo and 863 from Sabey/McKinstry proposal</p> <p data-bbox="1008 1130 1831 1182">Relies on biomass for reduction</p>

# Conclusions

- Advantages for Harborview to both remain on Seattle Steam and have on-site utility plant
- Sabey/McKinstry proposal provides greatest savings, however, offset by Seattle Steam's proposed rate
- Risks of continuing to procure energy from an unregulated utility

# Recommendations

- Recommendation 1: The County Executive should ensure that the Harborview energy plant has sufficient infrastructure to support flexibility of energy sources for Harborview.
- Recommendation 2: The County Executive should attempt to negotiate a rate structure with Seattle Steam that allows for flexibility of energy sources at Harborview in an economic manner.