MINUTES - ENVIRONMENTAL COUNCIL COMMITTEE MEETING 11/20/08

The meeting was called to order @ 6:01 PM, Thursday, November 20, 2008, in the North Conference Room @ 21630 11th Avenue South, Des Moines with the following in attendance:

Council Members	City Staff
Scott Thomasson – Chairman	Tony Piasecki, City Manager
Bob Sheckler	Lorri Ericson, Assistant City Manager
Dave Kaplan	Grant Fredricks - Director PB&PW
	Loren Reinhold, Assistant Director - Presenting
	Erika Sullivan – Administrative Assistant

Meeting Agenda:
1. Conclusions and recommendations from the consultant's evaluation of Water District 54.

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1. Conclusions and recommendations from the consultant's evaluation of Water District 54:

- PACE is the City's consultant for preparing the Downtown Water System Evaluation.
- A summary was handed out with the consultant conclusions and recommendations.
  - Current fire flow requirement is 1000 gallon per minute (gpm) for single-family residential and **3500 gpm** for multi-family and commercial land use. South King Fire & Rescue (SKFR) would like to plan for a future minimum of 5000 gpm of available flow.
  - Three properties have individual fire flow requirements higher than 3500 gpm (Mariner Manor – 5500 gpm, South Shore Condos – 4500 gpm and Des Moines Elementary 4000 gpm).
  - Water District #54 (WD #54) would like to restrict pipe velocity to 8 ft. per second (fps) for all conditions including fire flows. With this restriction the system is able to produce flows of 2250 gpm.
  - The cost for pipe improvements for WD #54 is $18.1M with an additional $1.4M for pipe improvement with the Highline Water District to meet fire suppression storage needs.
- 2004 Comprehensive Plan (Hedges & Roth consultants) had a fire flow duration of 3500 gpm for 3 hours rather than 4 hours. Single-family and duplex areas 1000 gpm, multi-family 2500 gpm and commercial at 3500 gpm.
- Gray and Osborne is the District's current engineer. Most of the system is 40 years old, and made of asbestos concrete pipe. G&O recommends restricting pipe velocity to 8 ft. per second and that number was self-imposed – The velocity restriction is not required by Department of Health under fire flow conditions.
  - The maximum amount is currently 2250 gpm based on 8 ft/sec velocity.
  - Committee members said the velocity restriction during fire flow conditions is unreasonable and that by increasing the velocity to 10 ft/sec would increase gpm 20%.
- 2004 Plan improvements included connecting fire hydrants across Marine View Drive at five locations but with the 8 ft/sec restriction they still would not be able to achieve 3500 gpm.

- SKFR has a problem with 2500 gpm fire flow and Fire Marshall Biesold has concerns about WD #54 saying the pipes could be blown out if they increase velocity above 8 fps. Asbestos cement is brittle and acidic soil can leech concrete out of the pipe. Soils in this area are acidic.
- Committee members discussed the relationship of water pressure and water. The design pipe velocity in the City of Redmond is 10 ft/sec.
    - Higher velocity does stir up what sits on the bottom of the pipe. WD #54 is concerned that stirred up sediment could erode the pipe. However, it is practical to use 10 ft/sec as the velocity.
    - Staff was asked how velocity effects water hammer – it is a matter of how quickly the flow is stopped that can cause water hammer. This is a concern of the District because of asbestos pipe is brittle and subject to water hammer damage. Committee members answered that to prevent damage the fire department would needs to shut down slowly.
- In the PACE evaluation the issue that is driving the cost was providing 5500 gpm to Mariner Manor, followed by South Shore Condos and Des Moines Elementary.
    - Committee members disagreed with the recommendations and said that these buildings are built under a previous standard and it is not a requirement that the Mariner Manor needs to meet 5500 gpm. Only new construction needs to meet the current standard of 3500 gpm. Staff said there is a deficiency given current standards.
    - Committee members asked if Mariner Manor met the standard under which it was built and it is non-conforming building. It would be easier to sprinkle the building than change the water system. Committee members do not want SKFR to dictate to the City.
- It would take much less than $18M to bring WD #54 up to current standards (providing 3500 gpm to new buildings). The committee members agreed that for public safety, 3500 gpm for multi-family and commercial property is a good design standard.
    - The City can set 3500 as our fire flow standard for new construction.
    - There may be spots where WD #54 cannot deliver 3500 gpm.
- What is the impact of not building to 5500 gpm?
    - The 3500 gpm is not a building limitation, big box stores may need more because of stock or supplies.
    - Fire code is driven by construction type and there are other options such as fire walls and sprinkling the building. Sprinkling can cut the requirement in half.
- Committee members asked what should distribution be at 3500 gpm, and if the standard is peak hour or max day.
- Committee members want to run this as a business with a $10 surcharge for improvements. WD #54 can make improvements and raise rates.
    - The City needs to validate the WD #54 flow model and look independently at the distribution system.
    - Ask our consultant to do the last piece of analysis. What would it take to just get to 3500 gpm? Is $18M the number to get to 3500 gpm or 5500 gpm?
- Staff said WD #54 needs 16” pipe to get from the reservoir to downtown.
    - Staff suggested running the model without the 8 ft/sec restriction.
    - Committee members said 12” pipe at 10 ft/sec is 3500 gpm.
    - Two 12” pipes versus one 16” pipe.

- Staff said much of the recommended improvements and upgrades were due to 8 ft/sec velocity.
    - WD #54 may still maintain 8 ft/sec, but we need to ask the consultant how to get to 3500 gpm.
    - Committee members asked if WD #54 could issue the debt, and staff answered that the amount of debt is capped. However, they do have unlimited rate setting.
    - WD #54 could form a Utility Local Improvement District (ULID) and assess property. A 40% protest could stop the ULID, unless it is a health hazard.
- Staff should arrange a meeting with SKFR and WD #54 with the goal to bring the material to Council, and agree how to represent this report (meeting date is scheduled the 2nd week of December).
    - Staff should communicate the Environmental Committee position of 3500 gpm to SKFR and WD #54.
    - 3500 addresses fire suppression storage and the 2 reservoirs can meet 3500 gpm for 3 hours, which is an adequate supply. It would not be enough for 5500 gpm for 4 hours.
    - Have WD #54 correct the boundary issues in Figure 5-1.

Adjourned @ 7:00 PM

Respectfully submitted by: Erika Sullivan, Administrative Assistant