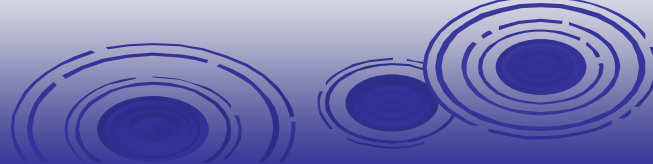




Gaining Support for Stormwater Improvements in Fort Worth, Texas

Bayou Preservation Association
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Thanks. I'm pleased to have an opportunity to speak to participate in a discussion of how to improve storm water management, and particularly, how to gain subject of gaining the public support that is necessary for this to occur. This is an area of interest I've focused a lot of my efforts on over the last 10 years in Fort Worth, and I think we've done a few things that have been surprisingly successful.

I don't mean to brag—we are still far behind other major cities in our state with respect to storm water management programs. But, we have made remarkable strides in a few years.

For years, decades even, storm water management in Fort Worth didn't get much attention until a major flooding event. Unlike Houston, our rainfall tends to come in the form of infrequent "frog strangling" downpours separated by months or even years of drought. When these occurred, we'd respond by commissioning an local engineering study, but by the time the study was completed the problem was usually long forgotten about. Another study for the book shelf.

This situation left Fort Worth with a very weak storm water management program, if you could call it one. Let me begin by describing where we were 10 years ago:



1998 Stormwater Program

- **Inadequate funding**
- **No defined “program”**
- **Fragmented, disorganized staff**
- **Inadequate inventory of facilities**
- **No current watershed plans**
- **Outdated design standards**

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•First of all, we had Inadequate Funding, which is an understatement—about \$5 million/yr or so, for all of our programs, for a city with a population over 500,000. In the scheme of things, SW was a very low priority. We did only what had to be done, responded only when the phone rang.

•No “program”—priority so low, you’d have a hard time finding it. We had a ditch cleaning program, we did what was required to meet EPA mandates, and that was about it.

•Staff—functions were scattered through various departments; ditch cleaning, for example was organized under and generally viewed as a streets function. We had no single person identified anywhere in a storm water leadership role.

•Inventory—Had almost no inventory available for planning or operations. We had not a single map showing the location of creeks and channels in the City. Channel maintenance work was tied to street addresses.

•Watershed plans—few, decades old and totally outdated

•Standards— 1967 was the last major update, which meant that our policy was to get rid of the water as quickly as possible and put it into a concrete pipe or channel and until very recently, no control over downstream impacts. In 1998, for example, we still had a written policy that encouraged concrete channels by sharing with developers in the cost of construction. We also had weak enforcement—due to lack of staff as well as a strong pro-development attitude--of the standards that we did have.



Special Challenges

- **Wide spread flash flooding**
- **Major erosion along channels and streams**
- **Aging infrastructure**
- **Rapid growth**
- **Resistance to tax increases**
- **Existing Environmental Fee**

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We also had some special challenges, although several of these are common to other cities:

• **Flooding** – We have a number of very large drainage systems that are buried under the ground, often running under homes and businesses. Sometimes able to carry no more than a 2 year storm (29 storm sewer systems serving 300 acres or more, one serving a watershed of over 900 acres!) When we have the occasional intense local thunderstorms, these systems surcharge and streams re-emerge but now pass through homes and businesses.

• **Erosion**—common problem associated with urban development without strict development controls.

• **Aging systems**: Some of our sewers are nearly 100 years old, some built out of rock and mortar. We don't know how many are failing, but we are beginning to see failure.

• **Rapid growth** —FW has been and continues to be the fastest major growing city in the country where 15-20k people, or a small "town" is added to our city each year... and, because of poor standards, we were continuing to build new "problems".

• **Resistance to new taxes**: We're certainly not unique in this area, but the local culture is strongly opposed to raising taxes and the city has over the last couple of decades trended toward lower taxes.

• **Environmental Fee**—When most large cities were setting up storm water utilities in the 90's in response to EPA mandates, FW elected instead to set up a small "environmental fee" that is attached to local water bills. This fee had little ability to expand itself to meet storm water needs, but its presence on the monthly water bill made selling a storm water fee a little more difficult.



First Steps

- **1998** **Storm Water oversight established to develop a Master Drainage Plan**
- **1999-2003** **Which comes first—Funds or effective development policies?**

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In spite of these huge challenges, we've made remarkable progress in recent years:

- 1998—first storm water oversight position created [me].
- 1999-2003— For 4 years, I pushed to set up a storm water utility, but other priorities got in the way and couldn't make up our mind how to go about it. Should we try to clean up our archaic policies as a first step, before asking for more money? Or should we get our program in place first, then move into time consuming and difficult process of changing design standards,?
- Suddenly, in 2004 we got a firm decision from the Mayor and Council to develop comprehensive Program— and they wanted it done NOW.

In 2004 we made a “compelling case” for change...with Mother Nature's help...

[NEXT: PHOTO THUNDER]

[Next—photo/THUNDER]

FORT WORTH



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[THUNDER]

We had 2 major storms in 2004, flash flooding over 300 businesses and homes, and resulting in 5 drownings...

FORT WORTH



Streams left their banks

FORT WORTH



Traffic was shut down



Water spilled out everywhere

FORT WORTH



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Streets looked like rivers

FORT WORTH



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Streams buried in pipes under houses quickly re-emerged at the surface between and through homes



Not all areas of the city were impacted by these storms, and they came and went very quickly. This scene is just an hour after the storm hit this commercial area next to TCU. The driver of the black car thought he could drive thru the flood water...



Same area, again only an hour after the storm—you can see the trace of flotsam deposited on the wall just an hour before.



Another illustration of why it's not good to put streams in pipes... This resident just moved into this home a few days before this photo was taken and didn't have a clue that there was a 78" pipe under her front yard, until the pipe sprung a leak in the middle of the night and started gushing upward creating a 6' geyser!



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One final photo to illustrate the public safety problem that set the stage for decisive action. This is a culvert where 2 months before a young mom and two children were washed away. This guy was lucky... he got out in time.

[NEXT: CHARGE TO STAFF]



Charge to Staff

- **“Fix what’s broken!”**
 - *Develop comprehensive, long-term solution to correct present deficiencies*
- **“Don’t make things worse!”**
 - *Update policies & standards to prevent new problems being built in the future*

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By the time the storm clouds cleared... the City Manager was asking staff to get busy with both of the strategic storm water issues we’d been debating for 5 years. Specifically, we were given 2 charges—

•Fix—develop...

•Don’t--update

[NEXT: OUTREACH]



Involving Stakeholders

- **Storm Water Program & Funding**
 - *Develop 5-Year Vision*
 - *Develop long term funding solution*
- **New Policies & Standards**
 - *Establish goals and general policies*
 - *Develop enforceable standards*
 - *Involve and train engineers*

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We responded by setting up two stakeholder task forces, each facilitated with a consultant:

Program/Funding— involving a group of 24 leaders representing the community.

- The first phase developed goals, priorities and a detailed 5 year vision of what the storm water program should look like.
- The second phase developed specific recommendations for implementing a storm water utility including an rate schedule to accomplish the 5-Year vision.

Policies—this was a rather loose group of about 40 developers and engineers met several times/month for over a year on this task force. This was a tough sale—several said flat out that nothing “was broken”. One thing that was very helpful was to draft some general goals that were general enough to avoid arguments but which could later be used to overcome specific sticking points. Major progress was not achieved for over 6 months, however, until the task force on their own initiative organized into three separate working committees covering different areas of policy. This did two things: (1) it gave ownership to the individual members and (2) it allowed individual members to focus on areas where they were most concerned and wanting to make positive changes.



Recommended Program--2006

Program Element	Current Program	Year 1	Year 2	Year 3	Year 4	Year 5 and beyond
Infrastructure Reconstruction	\$2,417 (32%)	\$8,567 (49%)	\$8,567 (49%)	\$8,567 (50%)	\$14,767 (64%)	\$14,767 (61%)
Operation and Maintenance	\$2,979	\$4,039	\$4,039	\$4,959	\$4,959	\$6,214
Inventory/Condition Assessment	\$110	\$1,310	\$1,310	\$210	\$210	\$210
Floodplain Management (DOE)	\$223	\$223	\$223	\$223	\$223	\$223
Master Planning	\$286	\$1,286	\$1,286	\$1,286	\$786	\$786
New Development Drainage Review	\$115	\$190	\$190	\$190	\$190	\$190
Regulation/ Enforcement (DEM)	\$1,074	\$1,074	\$1,074	\$1,074	\$1,074	\$1,074
Admin/Management	\$105	\$275	\$275	\$275	\$275	\$275
Public Education	\$89	\$145	\$145	\$145	\$145	\$145
Emergency Spill response	\$205	\$205	\$205	\$205	\$205	\$205
Other (Technology update, Safety Training)	\$0	\$200	\$200	\$212	\$212	\$212
PROGRAM TOTALS	\$7,603	\$17,514	\$17,514	\$17,346	\$23,046	\$24,301

After some 18 months or so we had a new set of policies and a recommended comprehensive 5 year plan for improving the storm water program, tied to specific funding needs. Program totals are shown to increase from \$7.6M to \$24.3 million over the first 5 years, a three-fold increase.



Funding the 5-Year Program

- Storm Water Utility established
 - *Reliable, long-term financing*
 - *Flexible funding source*
 - *Fair and equitable*
- Fees based on Impervious Area
 - *Estimated for Single Family Residential*
 - *Measured for other uses*

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A storm water utility fee was selected as the method for financing the recommended improvements...

A storm water fee was selected because....

Fees are based.... This was an important decision that sets Fort Worth apart from other s w utilities that ESTIMATE impervious areas for non-residential areas based on general relationships that only work well in large aggregations of properties. Our method is more precise and thus more equitable and easier to defend. And, it does one other thing important—it directly encourages development that reduces impervious area....

NEXT—we measure impervious areas using high resolution photography...



Identifying Impervious area using NCTCOG Aerial Data

Ivy Leaf Lane – Residential – 5,200 sq ft



Commercial Property – 53,600 sq ft impervious area



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This shows an example of an impervious area analysis for a SFR on the left, a commercial site on the right....



This cartoon illustrates the point I made about the need to dis-incentivise impervious areas... The speaker is telling how they've been able to reduce their storm water fees by eliminating the building's roof and leaving the parking lot unpaid.... That's not far off, really—we're beginning to see "green roofs" and "pervious parking" lots, which, under our scheme, are exempt from storm water fees.



Outreach

- Neighborhood & civic group meetings
- Newspaper & television coverage
- Newspaper “infomercial” ads
- Program Brochure
- Water bill inserts
- Cable TV
- City web pages
- **Storm Water Program Video**
- **Training Workshops**

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Outreach was emphasized from the beginning, using all the tools available to us. The last two listed, however, proved to particularly helpful:

Video—This was not something we originally planned to do all, but once we got into it, it turned out to be very helpful in a way we didn’t imagine. We decided to have the Mayor speak at the beginning of the video, but before we were finished most of the Council had joined in. This was something our outreach folks thought was poor communication, but it helped wonderfully when it got time for the final vote by Council.

The other major outreach effort was... the Training Workshops for development Engineers I mentioned previously, where we got “opinion leaders” to buy in the proposed changes and then to lead the work shop. Here is a photo taken of one of these workshops...

[PHOTO]



This was, as they say, a “watershed event” in terms of bringing engineers and the development community together to support not only the new design standards, but also the overall storm water program. This free event was attended by over 200....



Following Through

- **Inventory and Planning given priority**
- **The Customer is King**
- **“Make things better” design approach**
- **Credit system approved for BMP’s**
- **Critical needs addressed quickly**

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Once we got a favorable decision by the Council, we knew that we had to follow through on what we had recommended or we could quickly lose support. Here are some things we decided to emphasize:

- King—our program exists to serve the citizen, and we want to treat them that way. We respond quickly; we don’t talk down to them nor think we necessarily know best. This attitude carries forward on all of our contacts from routine maintenance requests to field adjustments during construction.
- Make things better—was a mantra to guide policy development, but it’s also something we’ve tried to apply to other activities. It means we try to incorporate amenities into capital project, to make them better than they have to be; it means we use a higher level design than is required by minimum standards if, for example, the capital improvement project creates an increased maintenance concern for the citizen.
- A credit system has been approved and is about to be implemented which will give percent reductions to storm water fees where the owner has incorporated or uses BMP’s which are environmentally sensitive. This was a specific request made by the task force set up to recommend a comprehensive program.
- Inventory and Planning were given high priority by the Task Force, and we have kept and even exceeded the commitment we made. We’ve been spending in excess of \$4M annually on these efforts.
- Critical needs addressed quickly—EXAMPLE is a low water crossing in a park near where a drowning occurred. NEXT



This is a photo of our maintenance forces improving this dangerous crossing. Now, we are more “privatized” in our approach to both CIP’s and maintenance than any other city I know of, but in this case, we wanted to show a prompt response. It was also a morale booster that showcased the abilities of our maintenance forces.



Major Milestones

- **2006**
 - First utility bills mailed
 - New design standards adopted
- **2007**
 - Storm water integrated & made self sustaining
 - First revenue bonds sold (\$25M)
- **2009**
 - \$20 M annual revenues
 - New citizen committee re-validates & extends Vision
 - 27% rate increase adopted for FY 1010
 - Second revenue bonds sold (\$45 M)

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Here are a few milestones to show you how far we've in the last 3 years since the utility was created...

2006— mailed in July—first revenues slightly less than 2 years after started process. Our new Design Manual was as adopted about the same time, after the training work shops.

2007—Storm Water program staff was integrated and made self sufficient by storm water fees; and we sold our first bonds

2009— this year, we are generated \$20 M in annual revenues, over 3X what we had available before the utility was established. We also decided to set up another citizen committee to re-validate, accelerate and extend our program. (For 2010, we'll be at \$27M)

One final note—we recently received the results back from an annual opinion poll... Storm Water was ranked Number 1 in terms of customer service compared to all city programs.

And, it's worth noting that SW is generally recognized as setting the "bar" within City government for the delivery of CIP's



Storm Water Management FY 10 Fee Proposal

	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Original monthly fee (2005)	\$2.90	\$3.25	\$3.75	\$4.25	\$4.50	N/A	N/A
Recommended monthly fee	\$2.90	\$3.20	\$3.75	\$4.75	\$5.15	\$5.70	\$6.42

- \$135 million in capital from FY09 – FY13 (> \$350 million critical backlog)
- Capacity to clean each inlet every other year
- Cut response time to pipe cave-ins by ~ 70%
- Mow all channels at least once per year and 35% twice
- Average resident pays ~ \$80/year in storm water fees by FY13
- Average annual fee increase of 15%/year (vs. 12% originally)

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One of the things we've done to keep faith with our citizens is to let them know how we've lived up to our commitments, and to ask them to re-validate the VISION we Committee, as requested by the original Task Force, for this purpose. This table shows where we think we need to go funding wise over the next few years. This was approved by the Committee and taken to the City Council as part of our budget process. This process worked well, in that while other agencies are cutting back or just trying to hold on to what they now have, we increased our fees by **27%**, which, incidentally, pushes us further ahead than proposed four years ago.



Lessons Learned

- **Be proactive**
- **Cultivate collaboration & trust**
 - Respond to others' ideas & needs
 - Allow others to direct the process
 - Seek out opinion leaders
 - Involve elected officials
- **Meet commitments**
- **Keep outreaching**

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We've exceeded the high goals we set for our program in every area, so maybe we did some things right... or maybe we were just real lucky! In any case, here are some lessons we've learned from our experience:

- Be proactive--Lay the Ground work —You need to know where you want to go, and you've got to talk it up... with other staff, management, and in the community... Be ready when the right time comes up...
- Cultivate—
- Meet commitments —critical. And be careful to manage expectations so that unexpected problems can be accommodated.
- And, for sure, keep outreaching to the public and community leaders as You can't afford to be too busy doing a "good Job" that you don't inform and keep the community involved in your program.
- **THANK YOU**

