Master Storm Sewer Reimbursement, Platting Fee & Revenue Adequacy Analysis

Sioux Falls
Storm Drainage Division
Rate Study

September 2009

AE2S
Think Big. Go Beyond.

Sioux Falls Storm Drainage Division

- Instituted in 1982
- Mission is to safely convey urban runoff to the Big Sioux River
- 2003 Stormwater Master Plan addresses regional stormwater needs
  - Both flood control and water quality elements
- Utilizes regional detention facility approach funded by Drainage System Cost Recover (DSCR); land by Regional Detention Charge (RDC)
- Shares costs of regional/oversized facilities 50/50 with developers

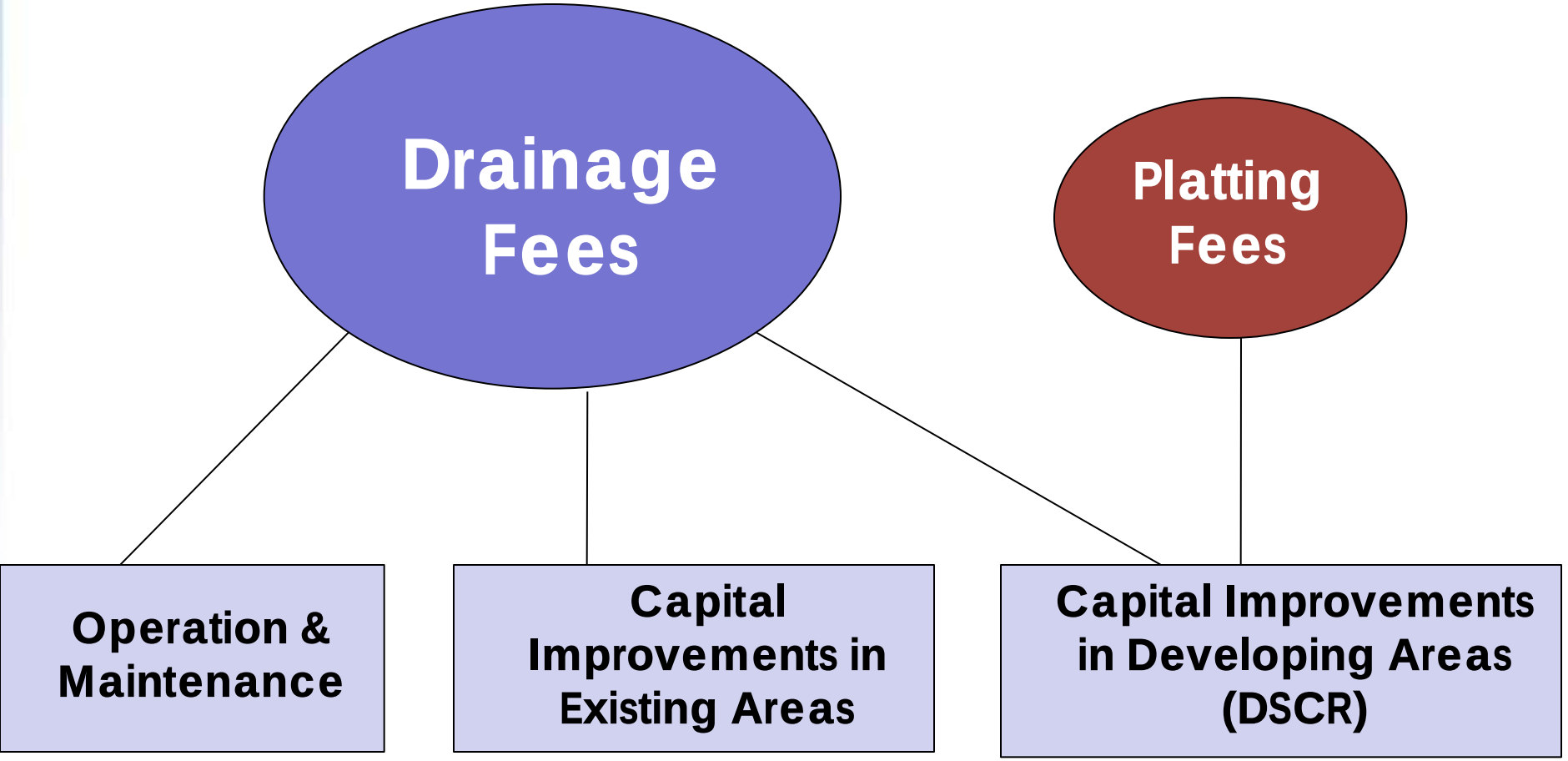
Storm Drainage Rate Study – Driving Forces

- Meet Revenue Requirements
- Keep up with Growth
- Rate Equitability
- Storm Drainage Utilities becoming more highly regulated
  - More systems being developed
  - Increased understanding driving regulations
- Water quality challenges lie ahead

Storm Drainage Rate Study – Components

- Rate Design/Cost of Service Analysis
- Revenue Adequacy Evaluation
- Ordinance Preparation
- City Council Meetings

Storm Drainage Utility Funding



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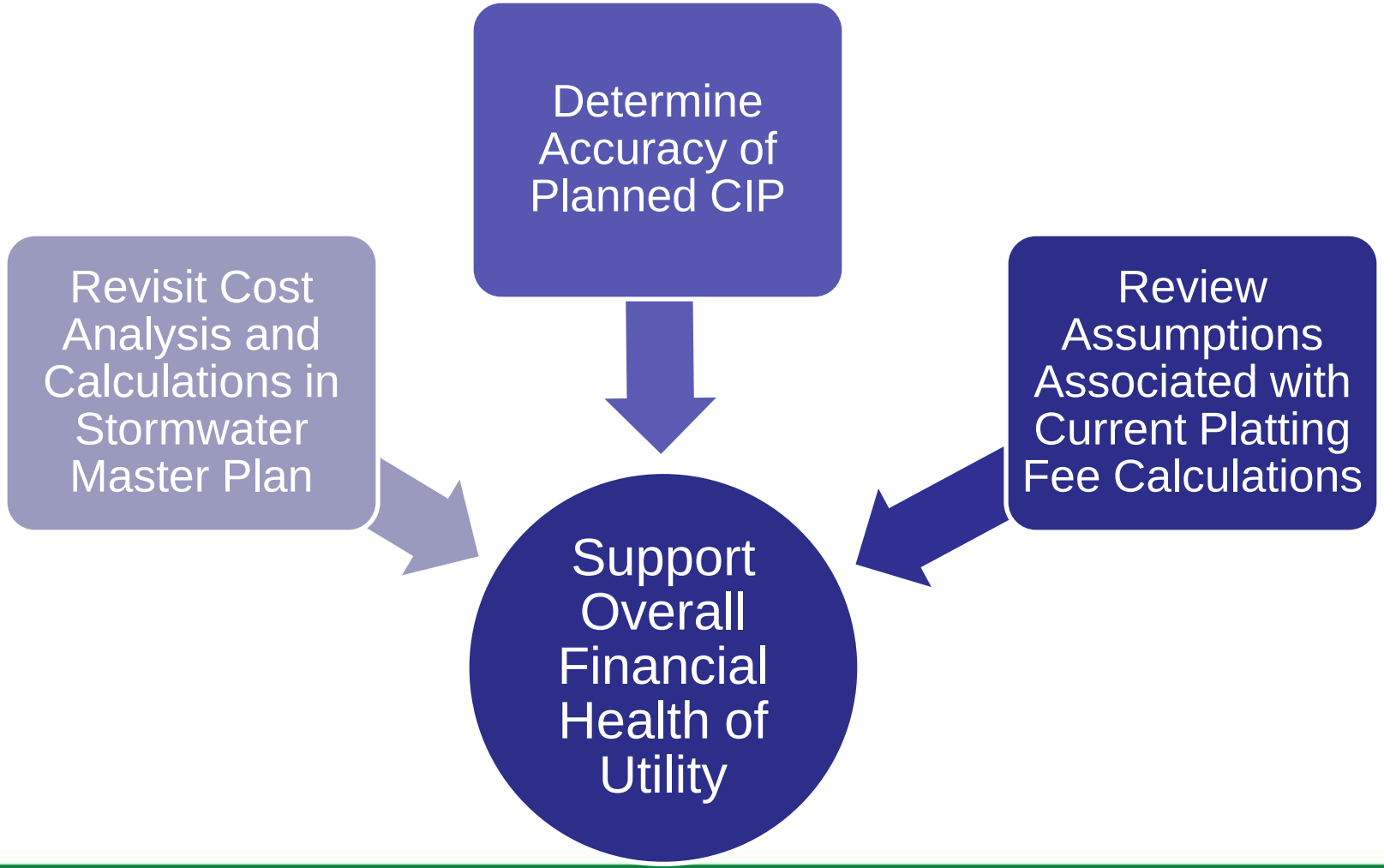


Outline

- Platted Acreage Analysis
- DSCR Recalculation
- RDC Recalculation
- Capital Improvement Planning (CIP) for New Development
- Projected Rate Adjustments and Revenue Adequacy

Platted Acreage Analysis

- Analysis of 2006, 2007, & 2008 actual platted acreage
- Reviewed Under 5 and Over 5 acreage relationships for various zoning classifications
    - Single Family Residential
    - Multi-Family Residential
    - Industrial
    - Commercial
    - Office
    - Public/Parks
- Reviewed relationship of acres collected on versus acres serviced

Platted Acreage Analysis

- Compared what was actually platted for each customer class to that projected in the DSCR/RDC Rate Design

	Total % of 2015 Available Acreage at the time of DSCR/RDC Rate Design	2006 Total % of Platted Acreage	2007 Total % of Platted Acreage	2008 Total % of Platted Acreage
Single Family	55.0%	42.8%	59.2%	59.96%
Multi-Family	5.6%	1.9%	3.2%	6.48%
Industrial	20.0%	16.0%	10.3%	11.54%
Commercial	5.3%	19.7%	3.0%	9.47%
Office	2.2%	7.8%	3.2%	0.75%
Public/Parks	11.8%	11.8%	11.8%	11.80%

Platted Acreage Analysis

- Assigned plats over 5 acres to a Single Family Equivalent (SFE) category

	Projected in DSCR/RDC		2006 Actual		2007 Actual		2008 Actual	
Total Acreage Charged Single Family Equivalent (SFE):	**71.60%**		**78.89%**		**82.44%**		**83.26%**	
	71.60% = 55.0% + 16.6%		78.9% = 42.8% + 36.1%		82.4% = 59.2% + 23.2%		83.26% = 59.96% + 23.3%	
Other Land Uses:	**Under 5 Acres**	**Over 5 Acres (SFE)**	**Under 5 Acres**	**Over 5 Acres (SFE)**	**Under 5 Acres**	**Over 5 Acres (SFE)**	**Under 5 Acres**	**Over 5 Acres (SFE)**
Multi-Family	2.8%	2.8%	1.0%	0.9%	0.6%	11.9%	1.2%	5.3%
Industrial	10.0%	10.0%	2.4%	13.6%	1.7%	8.5%	2.5%	9.1%
Commercial	2.7%	2.7%	3.8%	15.9%	1.8%	1.3%	0.5%	8.9%
Office	1.1%	1.1%	2.2%	5.7%	1.7%	1.5%	0.8%	0.0%
Public/Parks								
		16.6%		**36.1%**		**23.2%**		**23.3%**

- Found that plats in the SFE category are significantly outpacing original projections

Platted Acreage Analysis

- Reviewed data from Master Reimbursement (2006-2008) to understand the actual acreage that platting fees were collected on
- For same period, reviewed acres serviced by constructed regional facilities
- Determined that in that time frame:
  - DSCR
    - Collected on 2,233 acres
    - Regional Facilities Serviced 3,210 acres
  - RDC
    - Collected on 1,244 acres
    - Serviced 2,163 acres
- Lag in acres collected on versus acres serviced is resulting in deficient collections (*i.e.* out-servicing)

DSCR Recalculation

DSCR Calculation is comprised of two primary components

- Pond Construction Cost Portion
- Non-pond Construction Cost Portion

DSCR Recalculation

Pond Cost Portion

- Pond construction cost (PCC) review
  - Used most up to date information provided by the City for constructed facilities
  - Indexed forward (based on year constructed) to 2008 dollars
  - Looked at PCC versus pond storage volume for all constructed facilities to understand facility cost to date (cost curve)

DSCR Recalculation

Pond Cost Portion

- Projected PCC per watershed acre from 2006 DSCR rate calculation was approximately $1,893
  - This amount was based on non-indexed previous PCC and inflated projected PCC
- An analysis of PCC for facilities constructed to date yields a PCC per watershed acre value of approximately $1,235 in 2008 dollars
  - PCC for constructed facilities ÷ acres serviced
- Original projections appear to be high

DSCR Recalculation

Pond Cost Portion

- Revisited calculations from original master plan to recalculate PCC (i.e. cost curve)
- Recalculated PCC for all future facilities yields a projected average PCC per watershed acre of $1,547 (in 2008 $)
- Incorporating considered cost for both constructed and future facilities yields a PCC per watershed acre of $1,440 (in 2008$)

DSCR Recalculation

Non-Pond Cost Portion

- Current approach to non-pond construction cost (NPCC) calculation is assumptive (30% of Pond Capital Cost)
  - Yields a NPCC per watershed acre of approximately $1211
- To verify NPCC, reviewed three years of past reimbursements versus DSCR watershed acres collected on
  - NPCC per watershed acre = $1932

DSCR Recalculation

- DSCR cost = PCC + NPCC
- 2006 calculation of DSCR cost per watershed acre equaled $3,577 (in 2006 $)
- Recalculated DSCR cost per watershed acre equals $3,372 (in 2008 $)
  - $3,372 = $1,440 (PCC) + $1,932 (NPCC)
  - Historical indexed to 2008 $

DSCR Recalculation

- Based on the platted acreage analysis, over 5 acre land area allocation (SFE) was increased from 71.6% to 78.9%
- Public/Parks platting allocation remained the same
- All other land uses were allocated proportionally based on remaining percentage of land area

Land Use	2015 Available	% of Total Area	Total Area (w/ on-site)	C_2	Change in C	Weighted Change in C
Single Family	13,286	55.0%	78.9%	0.70	0.10	0.0789
Multi-Family	1,341	5.6%	1.6%	0.80	0.20	0.0031
Industrial	4,838	20.0%	5.6%	0.85	0.25	0.0140
Commercial	1,282	5.3%	1.5%	0.93	0.33	0.0049
Office	539	2.2%	0.6%	0.80	0.20	0.0013
Public/Parks	2,849	11.8%	11.8%	0.60	0.00	0.0000
	24,135	**100.0%**	**100.0%**			**0.1022**

DSCR Recalculation

- Using the new DSCR cost per watershed acre ($3,372) and the revised platted acreage analysis (78.9% → W = 0.1022), the DSCR fee was recalculated
- SFE DSCR Recalculation:

$1,649.47	**DSCR**	**=**	**R X (C_2 - C_1) X F X D**
5	R	=	Rainfall intensity for 100 year storm based on time of concentration (in/hr)
0.7	C_2	=	Runoff coefficient for developed condition for 100 year storm event
0.6	C_1	=	Runoff coefficient for pre-developed condition for 100 year storm event
3298.9	F	=	Cost factor ($·hr/ac·in)
1	D	=	Private onsite detention reduction factor
3298.9	F	=	(I X 0.5) / (R X W)
3,372.06	I	=	Cost per watershed acre for drainage improvements minus land costs
0.1022	W	=	Weighted change in runoff coefficient

DSCR Recalculation

- DSCR Recalculation (All land use types):

Land Use	Existing DSCR 2006 $	**Recalculated DSCR 2008 $**
Single Family	$1,579.70	**$1,649.47**
Multi-Family	$3,159.40	**$3,298.94**
Industrial	$3,949.25	**$4,123.68**
Office	$3,159.40	**$3,298.94**
Commercial	$5,213.00	**$5,443.25**
Institutional	$3,159.40	**$3,298.94**
Recreational	$0.00	**$0.00**
Agricultural	$0.00	**$0.00**

DSCR Recalculation

- Recalculation of SFE DSCR fee projects an increase of 4.4% from 2006 to 2008
- Although percentage increase in fees is shown, ***lag in collections may continue to result in insufficient utility funds***

RDC Recalculation

- BMP Pond Land Cost
  - Used most up to date information provided by the City for constructed facilities for which the land was not donated
  - Indexed forward (based on year purchased) to 2008 dollars
  - Decreased the projected cost per acre for future facilities from $45K to $35K based on input from City staff
    - Recent range of $22K to $45K per acre

RDC Recalculation

- Projected RDC cost per watershed acre for BMP facilities from 2006 RDC rate calculation was approximately $1,727 (in 2006 $)
  - This amount was based on non-indexed previous land costs and inflated projected land cost
- An analysis of land cost for facilities constructed to date yields an RDC cost per watershed acre of approximately $1,150 (in 2008 $)
  - Land cost for constructed facilities ÷ acres serviced
  - Facilities with donated land not included in the calculation
- Original projections appear to be high

RDC Recalculation

- Land cost data for facilities constructed to date was combined with land cost projections for future facilities to recalculate the RDC cost per watershed acre
- Cost per watershed acre for all facilities is averaged based upon:
  - $1150 per watershed acre (constructed facilities)
  - $35K per acre of future pond footprint ÷ total future acres serviced (future facilities)
- New calculations yield an RDC cost per watershed acre of approximately $1,686 (in 2008 $)
- Increase from $1,150 to $1,686 is due to more acres of footprint per acres serviced for future facilities

RDC Recalculation

- Using the new RDC cost per watershed acre ($1686) and the revised platted acreage analysis (78.9% → W = 0.1022), the RDC fee was recalculated
- SFE RDC Recalculation:

$824.70	**RDC**	**=**	**R X (C_2 - C_1) X F**
5	R	=	Rainfall intensity for 100 year storm based on time of concentration (in/hr)
0.7	C_2	=	Runoff coefficient for developed condition for 100 year storm event
0.6	C_1	=	Runoff coefficient for pre-developed condition for 100 year storm event
1649.4	F	=	Cost factor ($.hr/ac.in)
1649.4	F	=	(L X 0.5) / (R X W)
1,685.96	L	=	Cost per watershed acre for land
0.1022	W	=	Weighted change in runoff coefficient

Recalculated Weighted change, based on new allocation factors, is identical to DSCR change previously outlined

RDC Recalculation

- RDC Recalculation (All land use types):

Land Use	Existing RDC 2006 $	**Recalculated RDC 2008 $**
Single Family	$762.57	**$824.70**
Multi-Family	$1,525.13	**$1,649.40**
Industrial	$1,906.41	**$2,061.74**
Office	$1,525.13	**$1,649.40**
Commercial	$2,516.46	**$2,721.50**
Institutional	$1,525.13	**$1,649.40**
Recreational	$0.00	**$0.00**
Agricultural	$0.00	**$0.00**

RDC Recalculation

- Recalculation of SFE RDC fee projects an increase of 8.1% from 2006 to 2008
- Although percentage increase in fees is shown, ***lag in collections may continue to result in insufficient utility funds***

CIP Planning for New Development

- Master Plan projected build out of planned BMP's by the year 2015
  - Number of facilities constructed to date is on pace with Master Plan projections
    - 12 constructed to date
    - 19 identified facilities remain

CIP Planning for New Development

- Remaining facilities and associated watershed cost results in a projected cost of $40.5M (in 2008 $) to be spread over the next 7 years
  - *$5.7M per year*

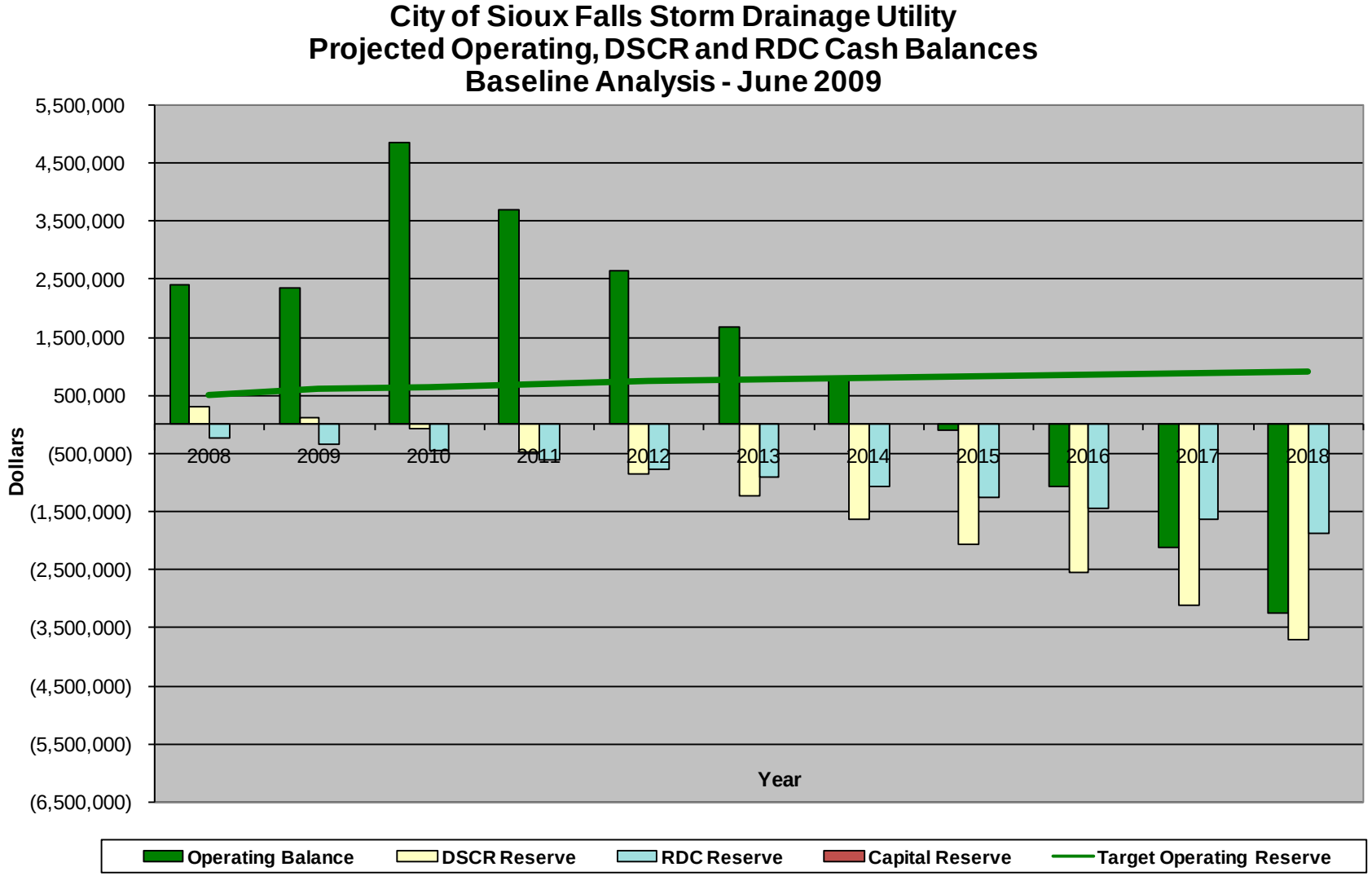
- Current CIP is planning for $4M (in 2008 $) in projects per year in developing areas

- Through discussions with City Staff, new CIP projections were established to be $4.5M per year beginning in 2011

Revenue Adequacy - Baseline

- Updated Revenue Adequacy model with 2009 budget and preliminary 2010-2014 CIP
- Implemented recommended adjustments to revenue requirements including the CIP
- *NO* rate adjustments
- Projects an increasingly deficient balance for all funds

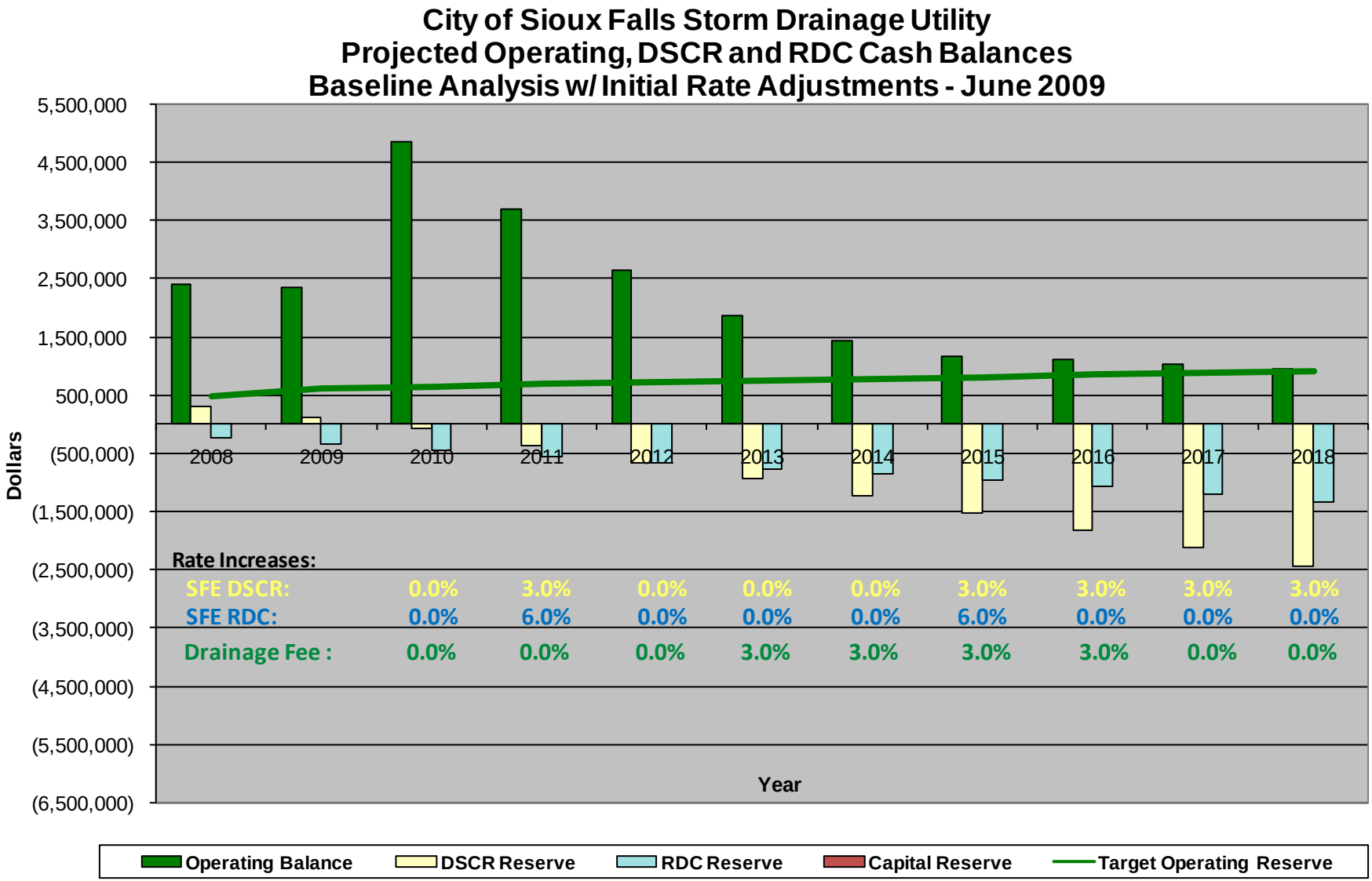
Revenue Adequacy - Baseline



Revenue Adequacy – Initial Rate Adjustments

- Implementation of rate adjustments to drainage and platting fees to account for increased revenue requirements
- Rate increases result in better health of operating balance, however DSCR & RDC balances are negative as a result of out-servicing

Revenue Adequacy – Initial Rate Adjustments



Additional Rate Increases for New Development

- With initial rate adjustments incorporated, lag in collections still results in insufficient utility funds
- Order of implementation / timing of large capital projects in developing areas is still a looming issue

Additional Rate Increases for New Development

- To mitigate potential deficiency associated with out-servicing & potential developing area CIP “upset” condition, it is recommended that:
  - A capital reserve fund be established
  - Additional increases to platting/drainage fees are implemented to address out-servicing (*i.e.* implement an out-servicing fee)

Additional Rate Increases for New Development

- To establish a recommended reserve amount, the following were taken into consideration:
  - Construction of largest remaining BMP facility and two average facilities in one year ~ $5.8M
  - In that same year, above average NPCC reimbursements ~ $1.8M

Additional Rate Increases for New Development

- Calculation of Potential "Upset" Condition:

  $5.8M (largest BMP Facility plus 2 average facilities constructed in 1 year)

  \+ $1.8M (Above Average NPCC Reimbursements)

  \- $4.5M (Developing Area CIP)

  = **$3.1M** (Estimated potential "Upset" Condition – 2008$)

- Through discussions with City Staff, it was determined that a $2M reserve would help to mitigate potential upset

Additional Rate Increases for New Development

- It is recommended the reserve be funded through debt service versus rate increases to avoid larger than necessary out-year operating balances
- Bonding Assumptions:
  - 2010 Revenue Bond:
    - $2.5M (Immediate $0.41M transferred to RDC cash balance)
    - 15 years
    - 5% interest rate

Additional Rate Increases for New Development

- Bond Repayment
  - Debt Service P&I = $276,984/yr
  - Split 50/50 between platting fees and drainage fees
  - Platting fees proportioned by average platting ratio of the DSCR & RDC

	$138,492	**Drainage Fee**
+	**$89,158**	**DSCR**
+	**$49,334**	**RDC**
=	**$276,984**	

Additional Rate Increases for New Development

- Out-servicing Fee:
  - Based upon average collection rates, negative growth associated with out-servicing can be broken down as follows:
    - Approximately $300K/yr negative growth in DSCR fund
    - Approximately $100K/yr negative growth in RDC fund
    - Total negative growth due to out-servicing = $400K/yr

Additional Rate Increases for New Development

- It is recommended that burden of out-servicing is split 50/50 between platting and drainage fees

	$200K	**Drainage Fee**
+	**$150K**	**DSCR**
+	**$50K**	**RDC**
=	**$400K**	

- Incorporating additional revenue for both out-servicing and capital reserve fees will result in improved health of all funds

Summary of Analysis - Key Variables

Key Variables	Scenario 1	Scenario 2	Hybrid Scenario
SFE Percent of Plats	83.2%	78.9%	78.9%
New CIP Projections (per year)	$5.7M, Starting in 2010	$4.5M, Starting in 2010	$4.5M, Starting in 2011
Operating Reserve Target	50%	25%	25%
Out-servicing Fee	50% Platting Fee, 50% Utility	50% Platting Fee, 50% Utility	50% Platting Fee, 50% Utility
Bond for Capital Reserve	$2.5M	$2.5M	$2.5M
-Debt Service for Capital Reserve	50% Platting Fee, 50% Utility	100% Utility	50% Platting Fee, 50% Utility
-Initial Transfer from Reserve to DSCR/RDC	$750K	$420K	$410K

Recommended Rate Adjustments – Platting Fees

- Recalculate the DSCR and RDC fees annually to incorporate prior year actuals
  - DSCR rate projections based on inflationary increases in 2011 and 2015-2018 (assumed inflation of 3%) plus fees
  - RDC rate projections based on inflationary increases in 2011 and 2015 (assumed inflation of 6%) plus fees
  - Rates stay static in 2012-2014 due to static CIP projections in these years

Recommended Rate Adjustments – Platting Fees

	Existing DSCR	Recalculated DSCR	Outservicing Fee	Capital Reserve Fee	DSCR + Fees
Land Use	**2006 $**	2008 $			**2008 $**
Single Family	**$1,579.70**	$1,649.47	$200.00	$119.00	**$1,968.47**
Multi-Family	**$3,159.40**	$3,298.94	$200.00	$119.00	**$3,617.94**
Industrial	**$3,949.25**	$4,123.68	$200.00	$119.00	**$4,442.68**
Office	**$3,159.40**	$3,298.94	$200.00	$119.00	**$3,617.94**
Commercial	**$5,213.00**	$5,443.25	$200.00	$119.00	**$5,762.25**
Institutional	**$3,159.40**	$3,298.94	$200.00	$119.00	**$3,617.94**
Recreational	**$0.00**	$0.00	$0.00	$0.00	**$0.00**
Agricultural	**$0.00**	$0.00	$0.00	$0.00	**$0.00**

	Existing RDC	Recalculated RDC	Outservicing Fee	Capital Reserve Fee	RDC + Fees
Land Use	**2006 $**	2008 $			**2008 $**
Single Family	**$762.57**	$824.70	$120.00	$119.00	**$1,063.70**
Multi-Family	**$1,525.13**	$1,649.40	$120.00	$119.00	**$1,888.40**
Industrial	**$1,906.41**	$2,061.74	$120.00	$119.00	**$2,300.74**
Office	**$1,525.13**	$1,649.40	$120.00	$119.00	**$1,888.40**
Commercial	**$2,516.46**	$2,721.50	$120.00	$119.00	**$2,960.50**
Institutional	**$1,525.13**	$1,649.40	$120.00	$119.00	**$1,888.40**
Recreational	**$0.00**	$0.00	$0.00	$0.00	**$0.00**
Agricultural	**$0.00**	$0.00	$0.00	$0.00	**$0.00**

Recommended Rate Adjustments – Platting Fee Projections

Land Use	DSCR + Fees 2010 $	DSCR + Fees 2011 $	DSCR + Fees 2012 $	DSCR + Fees 2013 $	DSCR + Fees 2014 $
Single Family	$1,579.70	$2,017.95	$2,017.95	$2,017.95	$2,017.95
Multi-Family	$3,159.40	$3,716.91	$3,716.91	$3,716.91	$3,716.91
Industrial	$3,949.25	$4,566.39	$4,566.39	$4,566.39	$4,566.39
Office	$3,159.40	$3,716.91	$3,716.91	$3,716.91	$3,716.91
Commercial	$5,213.00	$5,925.55	$5,925.55	$5,925.55	$5,925.55
Institutional	$3,159.40	$3,716.91	$3,716.91	$3,716.91	$3,716.91
Recreational	$0.00	$0.00	$0.00	$0.00	$0.00
Agricultural	$0.00	$0.00	$0.00	$0.00	$0.00

Land Use	RDC + Fees 2010 $	RDC + Fees 2011 $	RDC + Fees 2012 $	RDC + Fees 2013 $	RDC + Fees 2014 $
Single Family	$762.57	$1,113.18	$1,113.18	$1,113.18	$1,113.18
Multi-Family	$1,525.13	$1,987.36	$1,987.36	$1,987.36	$1,987.36
Industrial	$1,906.41	$2,424.45	$2,424.45	$2,424.45	$2,424.45
Office	$1,525.13	$1,987.36	$1,987.36	$1,987.36	$1,987.36
Commercial	$2,516.46	$3,123.79	$3,123.79	$3,123.79	$3,123.79
Institutional	$1,525.13	$1,987.36	$1,987.36	$1,987.36	$1,987.36
Recreational	$0.00	$0.00	$0.00	$0.00	$0.00
Agricultural	$0.00	$0.00	$0.00	$0.00	$0.00

Recommended Rate Adjustments – Drainage Fee

- Increase Drainage Fee to cover the cost of additional requirements, including:
  - CIP & budget adjustments
  - Required Revenue for Developing Area out-servicing
  - Developing Area Capital Reserve debt service

Recommended Rate Adjustments – Drainage Fee

- Drainage fee adjustments incorporated into the Revenue Adequacy model:

2010	2011	2012	2013	2014
0.0%	7.0%	7.0%	0.0%	0.0%

- Resulting projected Drainage Fee:

2009	2010	2011	2012	2013	2014
$ 0.0006020	$ 0.0006020	$ 0.0006441	$ 0.0006892	$ 0.0006892	$ 0.0006892

Recommended Rate Adjustments – Drainage Fee

- Past Example Calculation:

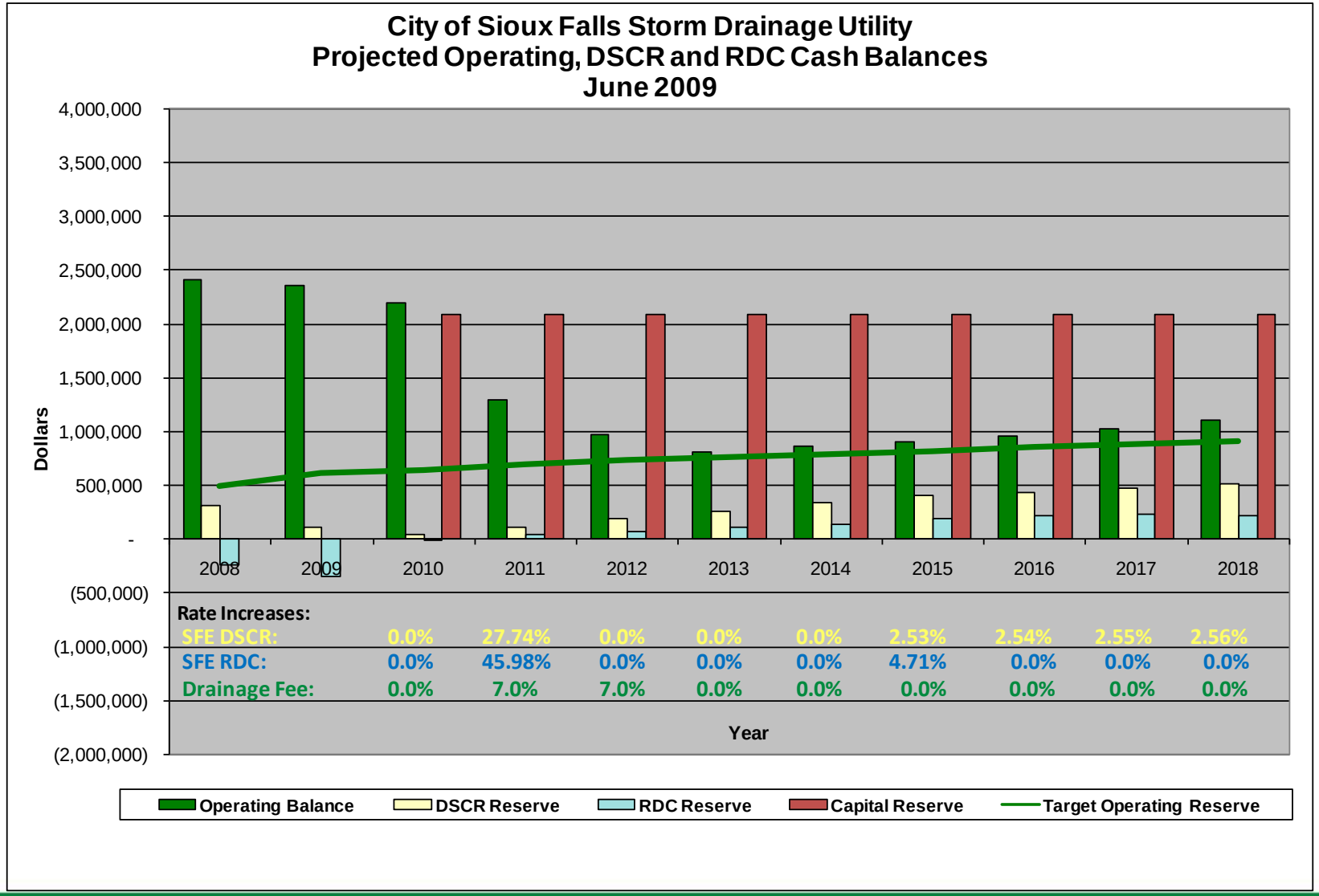
Sioux Falls, SD

		Sq. Ft of parcel		Runoff Weighting Factor		Unit Charge
Annual Storm Fee =			X		X	
Annual Storm Fee =		7,500	X	7.5	X	0.000602
Annual Storm Fee =	$	33.86				
Monthly Storm Fee =	$	2.82				

- With projected 2011 Unit Financial Charge ($0.0006441), example property would now pay

  $36.06 annually or **$3.01 monthly**

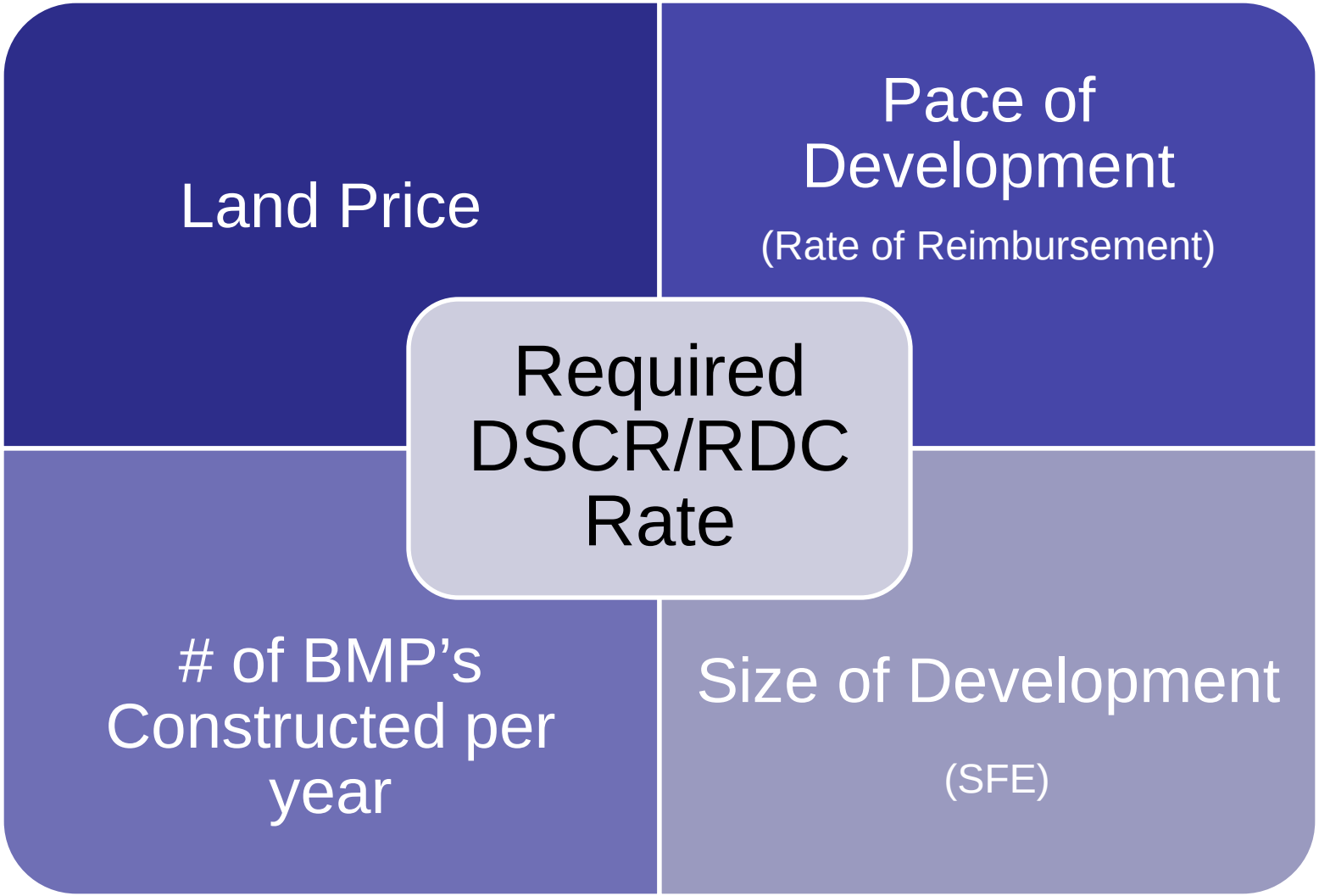
Revenue Adequacy- w/ Recommended Rate Adjustments



Course of Action

- ✓ 1st IRAB Meeting - July 2009
- ✓ Review Period - 60 days
- **2nd IRAB meeting - September 2009**
- ❑ Incorporate 2009 Actuals into Model – February 2010
- ❑ IRAB Meeting – March 2010
- ❑ Council Rate Adjustment Process – May 2010
- ❑ January 1, 2011 – Effective Date for Proposed Rate Increases

Sensitive Variables



Questions & Discussion