



WET WEATHER
STAKEHOLDER TEAM

Agenda



4:00	Tour of Southwestern Parkway Basin <i>Please arrive at the Shawnee Golf Course Clubhouse lower parking lot by 4:00. We have 2 vans to shuttle you to the basin.</i> <i>This address should get you there: Shawnee Golf Course 397 Northwestern Pkwy Louisville, KY 40212</i>
	<i><u>Sturdy, closed-toed shoes are a must!</u> If you have a hard hat, a safety vest and eye protection, bring them.</i>
5:15	Transition back to Shawnee Park Clubhouse
5:30	Dinner served
5:45 – 6:00	Welcome & Intro <i>Clay Kelly, Strand Associates</i>
6:00 – 6:15	IOAP Adaptive Management Update <i>Angela Akridge, MSD Chief of Engineering</i>
6:15 – 6:50	MSD Update and FY19-20 Financial Constraints <i>Tony Parrott, MSD Executive Director</i>
6:50 – 7:10	Final input from each Stakeholder, Observer Comments, Wrap-up and Adjourn <i>Clay Kelly</i>

Meeting Summary
Wet Weather Team Stakeholder Group Meeting
April 8, 2019
Shawnee Golf Course Club House, Louisville

The Wet Weather Team (WWT) Stakeholders, chartered by the Louisville and Jefferson County Metropolitan Sewer District (MSD), met on April 8, 2019, at MSD's main office. The objectives of the meeting were to:

- Tour the Southwestern Parkway Basin,
- Provide an update on the Integrated Overflow Abatement Plan (IOAP) Adaptive Management Plan, and
- Review the FY19-20 financial constraints.

Southwestern Parkway Basin Tour

Greg Powell, MSD Engineering Manager, Collection System and Construction, Brandon Flaherty, MSD Project Manager, Dakotah DeRoche of Burgess and Niple, and Nick Ulliman of Ulliman-Schutte led a tour of the Southwestern Parkway CSO Storage Basin. The tour included the aboveground improvements to Shawnee Park and the subterranean components of the basin. The project was certified operational in March 2019 and surface restoration is nearly complete.

Welcome

After returning from the tour, Clay Kelly of Strand Associates opened the meeting by welcoming returning members, introducing a new member (Andrew Condia of Senator Mitch McConnell's office), and reviewing the meeting objectives, agenda, and basic ground rules.

Before introducing the first speaker, Clay asked the Stakeholders to listen to the presentations and be prepared to provide feedback on the clarity of the message, the effectiveness of the communication, and how the message would be received by different groups such as elected officials and customers. Clay also explained that the discussions on stormwater are being paused for this meeting to allow the Stakeholders to provide this feedback. The group will return to the stormwater topic in the future.

IOAP Adaptive Management Update


Angela Akridge, MSD Chief Engineer, presented an overview of the IOAP budget history, current status, and future projections. She began by explaining that the original \$850 million program baseline was developed in 2008 and based on preliminary, high-level planning. Industry standards for typical planning-level cost estimates recommend including at least a 30 percent contingency factor. At the time, IOAP project contingency factors were limited to 10% due to the public acceptability of program costs exceeding \$1 billion dollars and the associated rate increase impacts on customers.


If a standard contingency of 30 percent had been incorporated into the original IOAP project cost estimates, the program baseline would have been \$1.02 billion. Based on what has been paid to date, the work in progress, and the work remaining, the current IOAP program is estimated to reach \$1.15 billion at completion. This \$1.15 billion includes a 20 to 30 percent contingency for future IOAP projects, with contingencies decreasing as scope definitions mature.

MSD's Consent Decree is somewhat unique compared to others in that it is not made up entirely of a prescribed list of projects that must be completed. Instead, while there are specific projects that must be completed, it is largely performance-based and must meet a level of control that was driven by the Stakeholder group and was agreed upon by MSD and regulators. This means that the plan to fulfill the Consent Decree must be adaptive in


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order to adjust to changing conditions and community priorities. These changes most often result in increased costs. For example, Southwestern Parkway Basin, which increased in size from 2.7 to 17.5 million gallons.

 Angela summarized the presentation by saying that the IOAP is technically costing more than was originally anticipated but is in-line with program estimates that consider industry-standard contingency factors.

Several stakeholders commented on the thoroughness and level of detail of the presentation and noted that it made following the presentation easier. One stakeholder asked whether the presentation was intended for Metro Council as part of a request for a higher rate increase. Tony Parrott, MSD Executive Director, responded by saying it was prepared to answer the question if it is raised. The stakeholder followed up by asking whether Metro Council approved the IOAP? Angela explained that it did not go through a formal review and approval with Metro Council, but that there was a lot of public outreach during its development and there was continuous coordination with Metro Council. The stakeholder also asked whether the initial 33 percent rate increase was made with the intention of covering the complete IOAP cost? Angela said that it was, however, it would only fund a 10 percent contingency. Brian Bingham, MSD Chief of Operations, added that there were  economic growth assumptions for the community that were included also that did not happen.

One stakeholder asked why rate increases were not made when changes requested by the public were made. Tony answered that when he first arrived the projects of highest priority were those to which the public was demanding changes. MSD's Board decided to spend additional money on these projects at the cost of deferring other projects. Those deferred projects are now coming up.


A stakeholder suggested including the costs of fines and/or penalties that were avoided by building the upsized and/or modified projects as an offset to the increased construction  costs.

Another stakeholder asked whether inflation was included in the original \$850 million budget. Brian answered that it was. Clay suggested it might be helpful if that information is included in the presentation.

A stakeholder observed that the presentation could be taken as blaming the community for making changes and increasing costs. In this stakeholder's opinion, those changes were not the main drivers of cost. Angela responded that the intention was not to blame anyone; the costs of those changes were significant though, and the public did not bring them up in the initial public meetings. They came up later when work was underway.

A stakeholder added that the presentation came across as defensive and suggested adding a slide that shows what was included in the initial planning compared to what was actually built. It would show the value of those additional dollars. A second stakeholder agreed with that approach and recommended taking a more positive tone. Put the fact that this was a huge program and you were planning many years into the future. When considering those factors, this program was very successful. A third stakeholder also agreed and stated that investment in the infrastructure through the implementation of the IOAP has served, and will serve, as a tremendous benefit to the community.

MSD Update

 Tony began his presentation by thanking the stakeholders for coming and saying that more tours of what the IOAP has built are planned for the future. Specifically, a visit to the Waterway Protection Tunnel to understand the scale of the project and the IOAP program. Tony reminded the stakeholders that the Critical Repair and Reinvestment Plan (CRRP) has not been started and every year of delay increases the cost of implementing it. The lack of funding is forcing MSD to make difficult decisions in balancing risks and finances.

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MSD is facing numerous risks, such as the increasing number of infrastructure collapses and failures, which results in sewer cave-ins, nonfunctioning flood pump stations, and poor treatment performance, all of which result in risks to the public health.

MSD also has several challenges on the financial side. For example, if MSD's debt profile worsens, it could result in a downgrade from the rating agencies that would lead to higher costs to finance projects. The bottom line is that MSD cannot mitigate the system risks identified in the CRRP because borrowing without a rate increase would result in a downgrade from the rating agencies and long-term financial impacts.

Currently MSD is facing a \$17.2 million shortfall in the current **fiscal** year. This is after staff identified \$8.9 million in projects that could be cancelled, interrupted, put on-hold, or otherwise deferred. This was done out of necessity. These projects are all still needed, and not moving forward with them puts the community at even greater risk. If not for MSD's cash reserves and efficient operations, the agency's rating would have been downgraded already, as MSD's debt service ratio is not at the level necessary for a typical Aa-rated utility.

MSD is developing its limited 5-year capital budget considering:

1. Active projects that are already in construction,
2. Mandated IOAP projects,
3. Maintaining permit compliance, and
4. Addressing critical flood protection needs.

However, a 6.9 percent rate increase will not be able to fund the last category and so no flood protection projects are currently planned. With the requested 9.9 percent rate increase, these projects could be funded (as well as several other critical projects). This significant under-funding will continue until at least FY23 when IOAP projects are completed and funds that have been going to the IOAP can be shifted. The impacts of underfunding is not new information. MSD has been bringing this up for years.

Several stakeholders suggested shifting the focus away from the risk of a credit rating downgrade to the specific projects that will not happen. A credit rating is an abstract idea while a problem not being fixed is relatable. They recommended being very specific with the projects, their exact locations, the problem, and how it will not get better, or get worse.

Stakeholders recommended listing the cancelled projects by Council District or neighborhood and using that to build coalitions. They also suggested meeting with the new council members.

One stakeholder asked whether we could solve the financing problem by extending out the Consent Decree or just not finish it. Angela explained that extending the IOAP implementation schedule would not solve the problem. Angela and Brian confirmed that the potential fines are too severe to risk not completing the IOAP. Tony added that MSD may be forced to risk these fines even though it would just be a temporary fix. Tony added that if MSD does not get the funds to start fixing the other issues, eventually the federal government will step in and force us to do it. Louisville would also lose what local control it has over decision-making.

A stakeholder agreed with Tony's statement and added that steady improvements are more cost-effective than sudden, rapid improvements.

Observer Comments, Wrap-Up, and Adjournment

Clay asked whether any stakeholders had any final comments. Several reiterated their recommendation to focus on specifics such as projects, neighborhoods, and consequences rather than abstract things like credit ratings and asset condition.

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One stakeholder said MSD should brag more about the improvements in our creeks and waterways. Those improvements are a direct result of MSD's efforts and the IOAP.

A stakeholder commented that the changes to projects should not be considered "improvements" over what was planned. The changes were necessary to correct what was planned. That is a good thing.

There were no comments from the observers.

Meeting Materials

- Agenda for the April 8, 2019 WWT Stakeholder Group Meeting
- Copy of the presentation slides – IOAP Update; MSD Update;

Meeting Participants

Wet Weather Team Stakeholders (Present)

Susan Barto, Mayor of Lyndon
Stuart Benson, Louisville Metro Council, District 20
Deborah Bilitski, Waterfront Development Corporation
Andrew Condia, Senator Mitch McConnell's Office
Mark French, University of Louisville Speed School of Engineering
Eric Friedlander, Louisville Metro Government, Chief Resilience Office
Corinne Greenberg, Carbide Industries
David James, Louisville Metro Council, District 6
Rick Johnstone, Deputy Mayor, Louisville Metro Mayor's Office (retired)
Maria Koetter, Louisville Metro Government, Director of Sustainability
Kurt Mason, USDA Natural Resources Conservation Service
Jeff O'Brien, Louisville Metro Government, Director of Louisville Forward
Rocky Pusateri, Elite Built Homes
Lisa Santos, Irish Hill Neighborhood Association
Tina Ward-Pugh, Louisville Metro Government, Resilience and Community Services, Office for Women
David Wicks, Get Outdoors Kentucky; Jefferson County Public Schools (retired)
Ward Wilson, Kentucky Waterways Alliance

Wet Weather Team Stakeholders (Not Present)

Steve Barger, Labor (retired)
Billy Doelker, Key Homes
Tim Fulton, Louisville Metro Government, Superintendent of Parks and Recreation
Arnita Gadson, West Jefferson County Community Task Force
Jody Meiman, Louisville Metro Government, Director of EMA/MetroSafe
Mary Ellen Wiederwohl, Louisville Metro Government, Chief of Louisville Forward
Nicole Yates, Representative John Yarmuth's Office

Wet Weather Team MSD Personnel (Present)

Tony Parrott, MSD Executive Director
Angela Akridge, MSD Chief Engineer

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Brian Bingham, MSD Chief of Operations

John Loechle, MSD Engineering Technical Services Director

Technical Support

Clay Kelly, Strand Associates

Paul Maron, Strand Associates

Meeting Observers

Doug Huttes, Strand Associates

Stephanie Laughlin, MSD*

Jenny Marks, Strand Associates

Steve McKinley, SCM Engineers

Wolffie Miller, MSD*

Greg Powell, MSD

Wes Sydnor, MSD

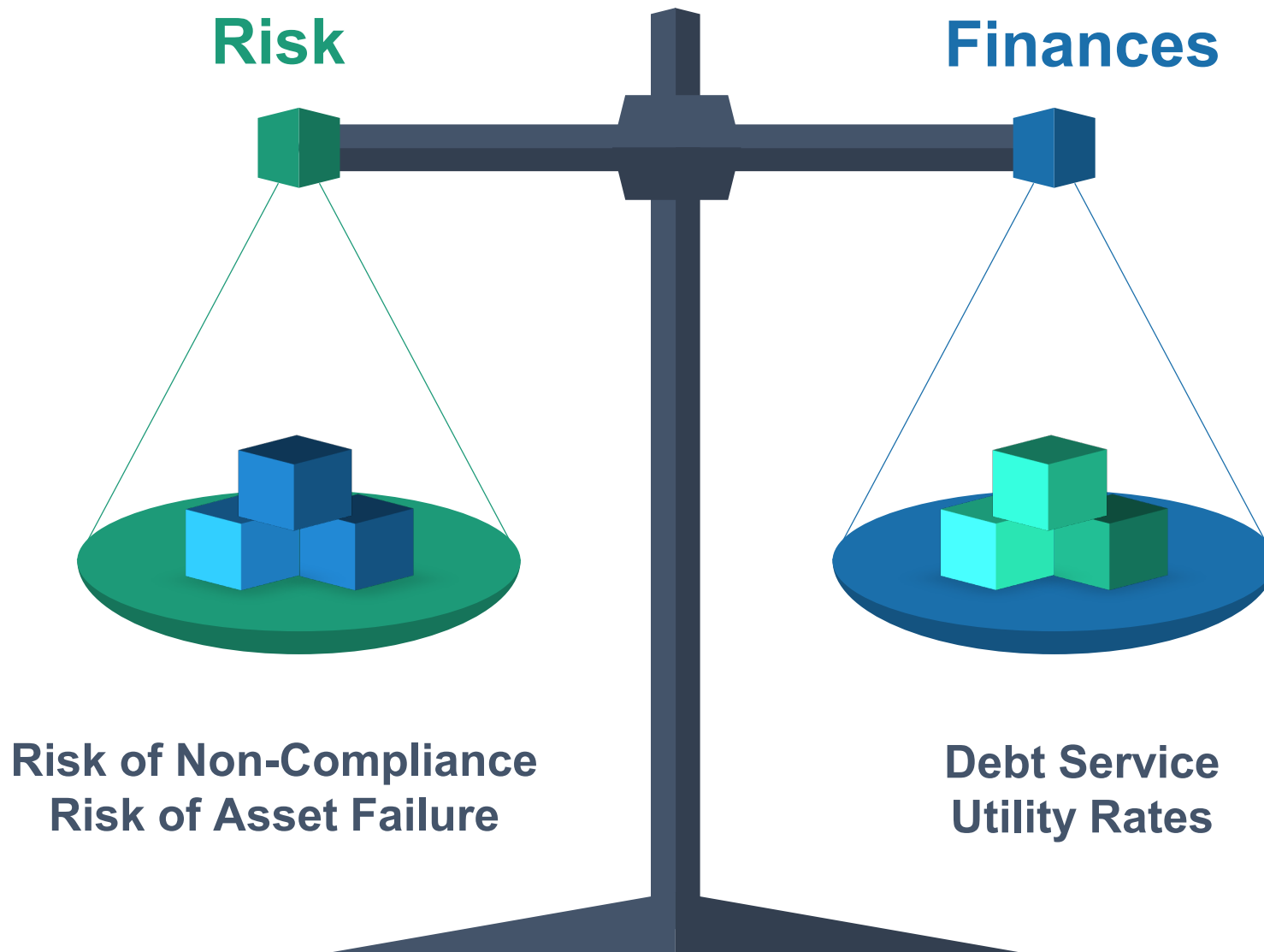
*attended tour only

MSD Update and FY19-20 Financial Assessment

April 8, 2019



State of the Union FY19-FY20



MSD is at a critical juncture needing to balance known risks with rates and debt.

Very difficult decisions must be made for the FY 20 CIP and operating budgets.

Balancing Risk

Risk of Non-Compliance
Risk of Asset Failure

Higher
operating
budgets



Beyond Useful Life
Lack of Spare Parts
Inefficiencies



Asset
Condition

Public
health
impacts



Sewers (Main Street)
Flood Pump Stations
Morris Foreman WQTC



Collapses
& Failures

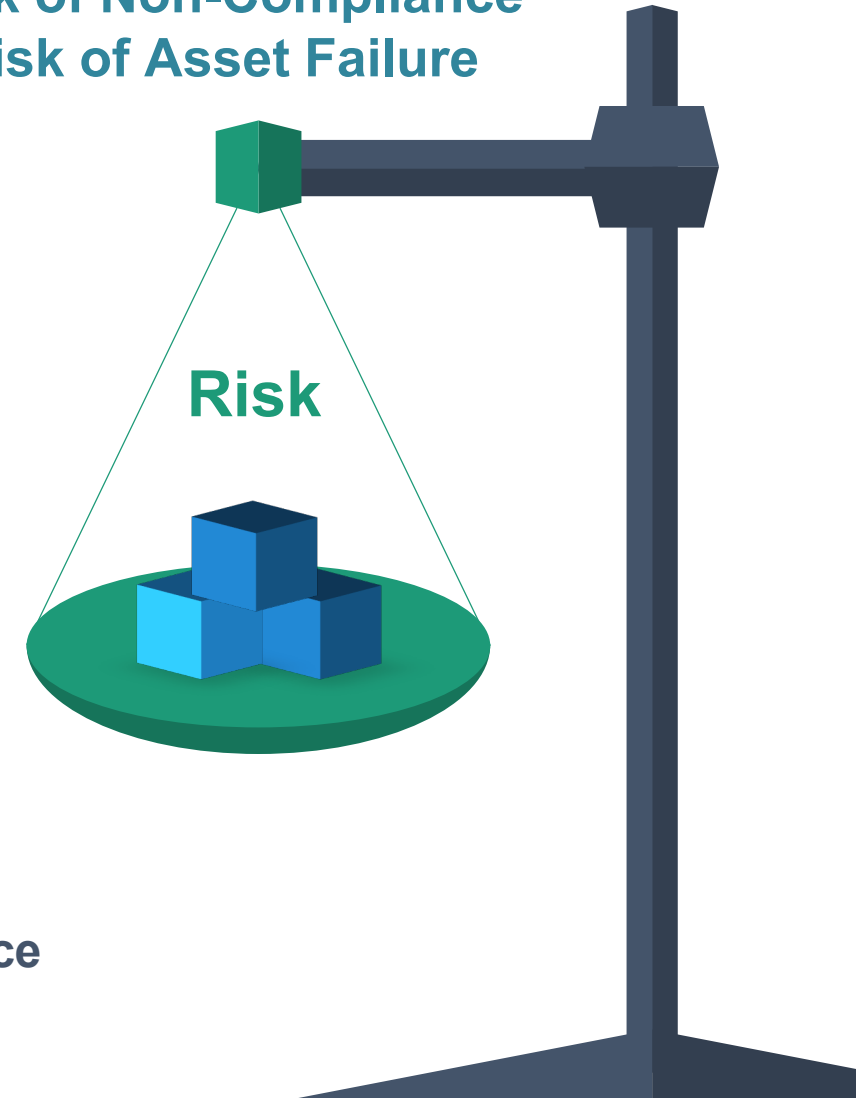
Fines and
erosion of
trust by the
Regulators



Consent Order
Operating Permits



Non-
Compliance



Balancing Finances

Debt Service
Utility Rates

Finances

Debt
Profile



Downgrade from
Rating Agencies



Higher cost to
finance capital
projects

Utility
Rates



Higher Costs for
Monthly Bills



Higher number
of defaults

Political
Will



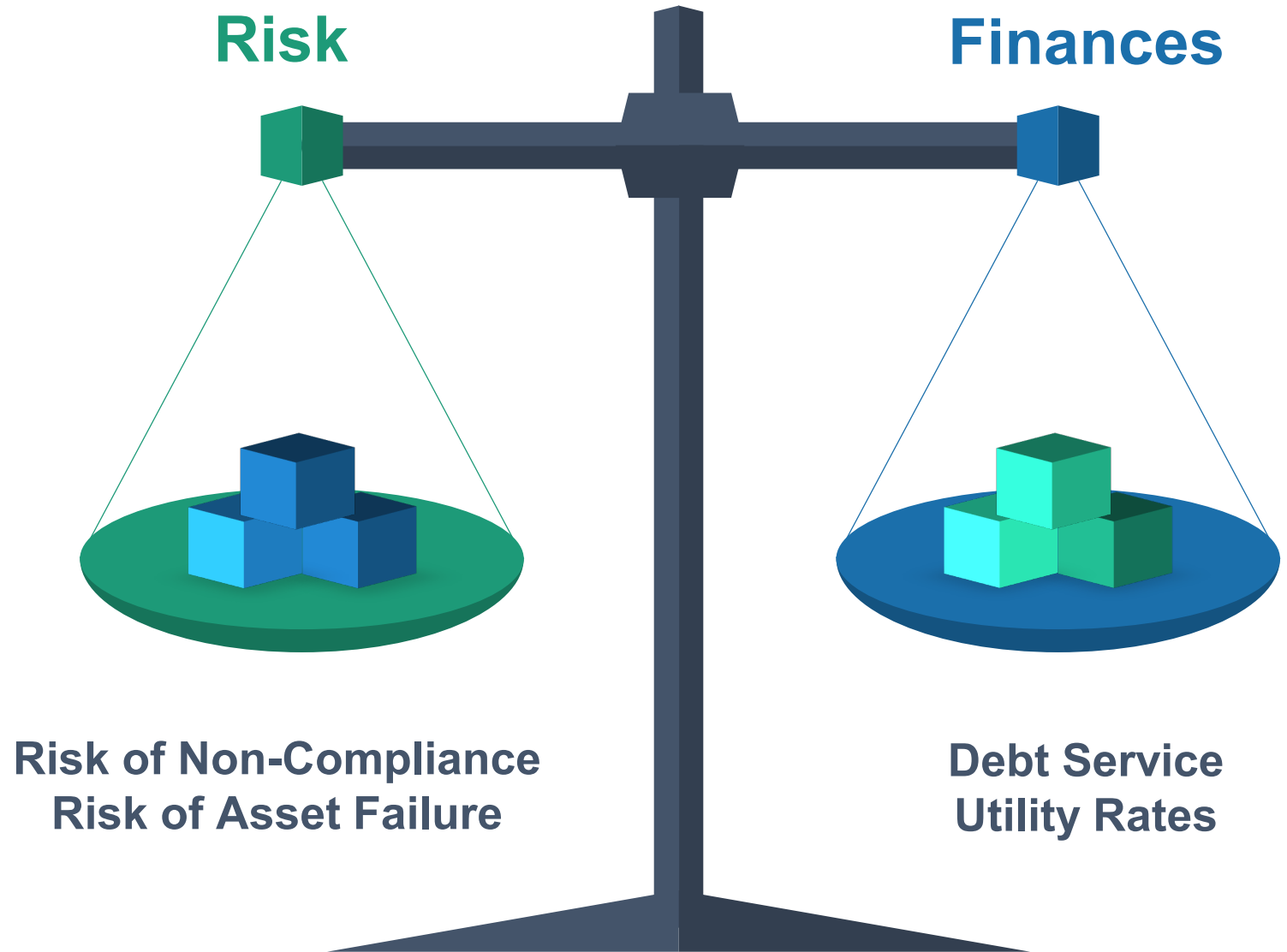
Local Affordability
Concerns for All City
and County Costs



Public
outcry

It is a Complicated Balancing Act

The **bottom line** is we cannot effectively mitigate the risks facing MSD today without either a higher rate increase or a probable downgrade from the rating agencies.



FY 2019 Capital Budget Performance

(through 2/28/19)

CIP Project Types	Approved Budget	FY 2019 Actual Spending	FY 2019 Remaining Spend Projection	Projected Excess or (Shortfall)
FY 16 - FY 18 Carryforward Projects	\$0	\$7,227,208	\$7,152,493	(\$14,379,700)
Consent Decree Projects	\$113,084,210	\$67,016,647	\$63,105,622	(\$17,038,059)
Wastewater (Non-IOAP Projects)	\$48,503,462	\$21,209,970	\$17,468,029	\$9,825,462
Stormwater & Flood Protection Projects	\$6,914,287	\$1,349,013	\$7,087,754	(\$1,522,481)
Support Services Projects	\$6,205,783	\$1,238,210	\$4,296,486	\$617,087
FY19 Appropriations	\$15,292,258	\$5,853,583	\$4,226,058	\$5,212,617
Total	\$190,000,000	\$103,894,631	\$103,336,443	(\$17,231,073)

- \$14M added for projects having continued spending from prior year
- Consent Decree projects continue to spend faster than initially forecasted
- \$3.2M added for I64 & Grinstead litigation
- \$1M added for emergency stormwater projects Pond Creek & Upper Mill Creek
- Any shortfall will reduce the capital budget available for FY20

Budget Mitigation Strategies – Restricted Spending

- Cancelled Projects
- Interrupted Projects
- On Hold Projects
- Deferred Projects

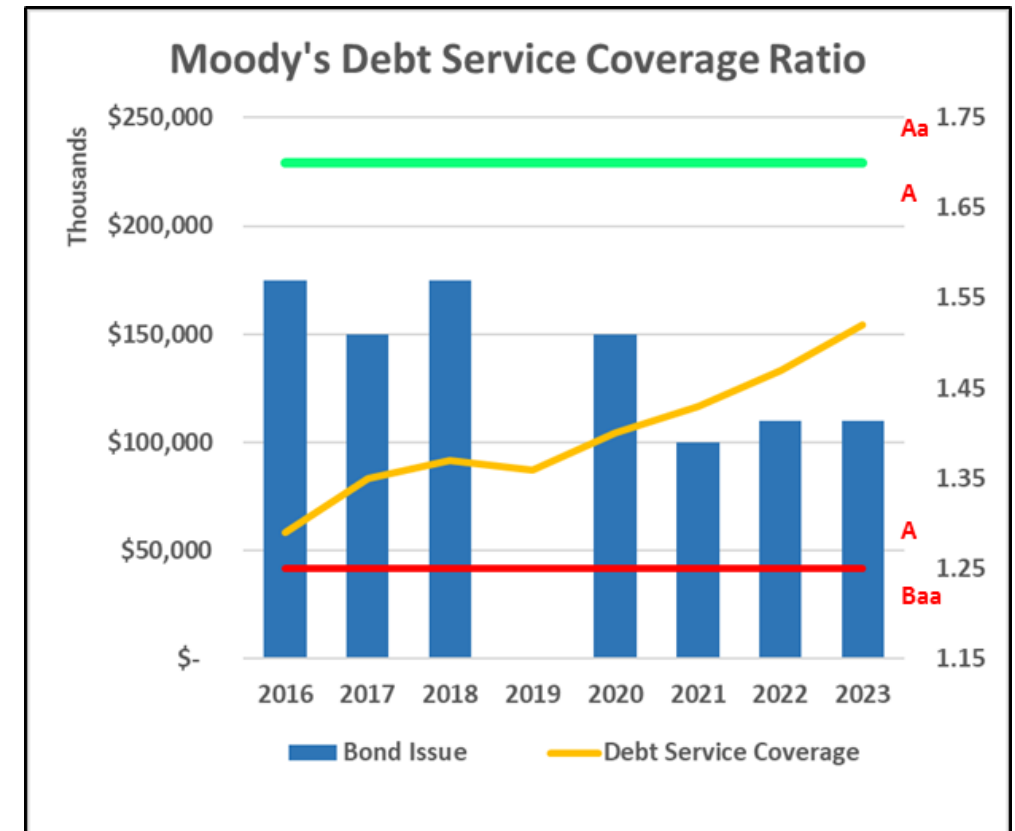
CIP Project Types	Number of FY 2019 Projects	Approved Budget	FY 2019 Actual Spending	FY 2019 Projected Excess or (Shortfall)
Cancelled Projects	105	\$2,172,069	(\$421,478)	\$2,592,547
Interrupted Projects	12	\$1,242,860	\$639,338	\$603,522
On Hold Projects	30	\$4,537,942	\$26,245	\$4,511,697
Deferred Projects	5	\$1,161,100	\$0	\$1,161,100
Total	152	\$9,113,871	\$244,104	\$8,868,866

Projects were cancelled out of necessity. However, the **NEED** for those projects remains and MSD's **risk** of asset failure has **increased** and MSD's **resiliency** to handle unforeseen conditions has **decreased**.

How Much Can MSD Afford for the 5-Year CIP

Fiscal Year	6.9% Rate Increase Scenario	9.9% Rate Increase Scenario
FY 2020	\$205M	\$255M
FY 2021	\$170M	\$260M
FY 2022	\$165M	\$265M
FY 2023	\$195M	\$215M
FY 2024	\$190M	\$205M
TOTAL	\$925M	\$1,200M

Totals are based upon updated financial analysis inclusive of use of cash reserves, bonds, commercial paper, surety bond, federal low interest loans, and state low interest loans.



Approach for 5-Year CIP Development

Active Projects with Continued Spending

Multi-Year Construction Contracts



IOAP construction projects, Hite Creek WQTC expansion, multi-year asset management projects.

Mandated Consent Order

Remaining Consent Order Projects



The Integrated Overflow Abatement Program (IOAP) continues to use the bulk of CIP \$.

Greatest Wastewater Need

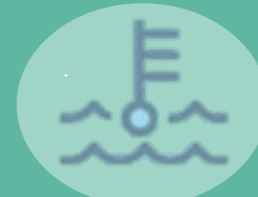
Morris Foreman Biosolids Program



Non-functional equipment, limiting capacity of the plant, creating permit compliance issues.

Greatest Flood Protection Need

Paddy's Run Flood Pump Station



The flood pump stations are critical assets protecting the community from river flooding.

What is left for Asset Management Spending?

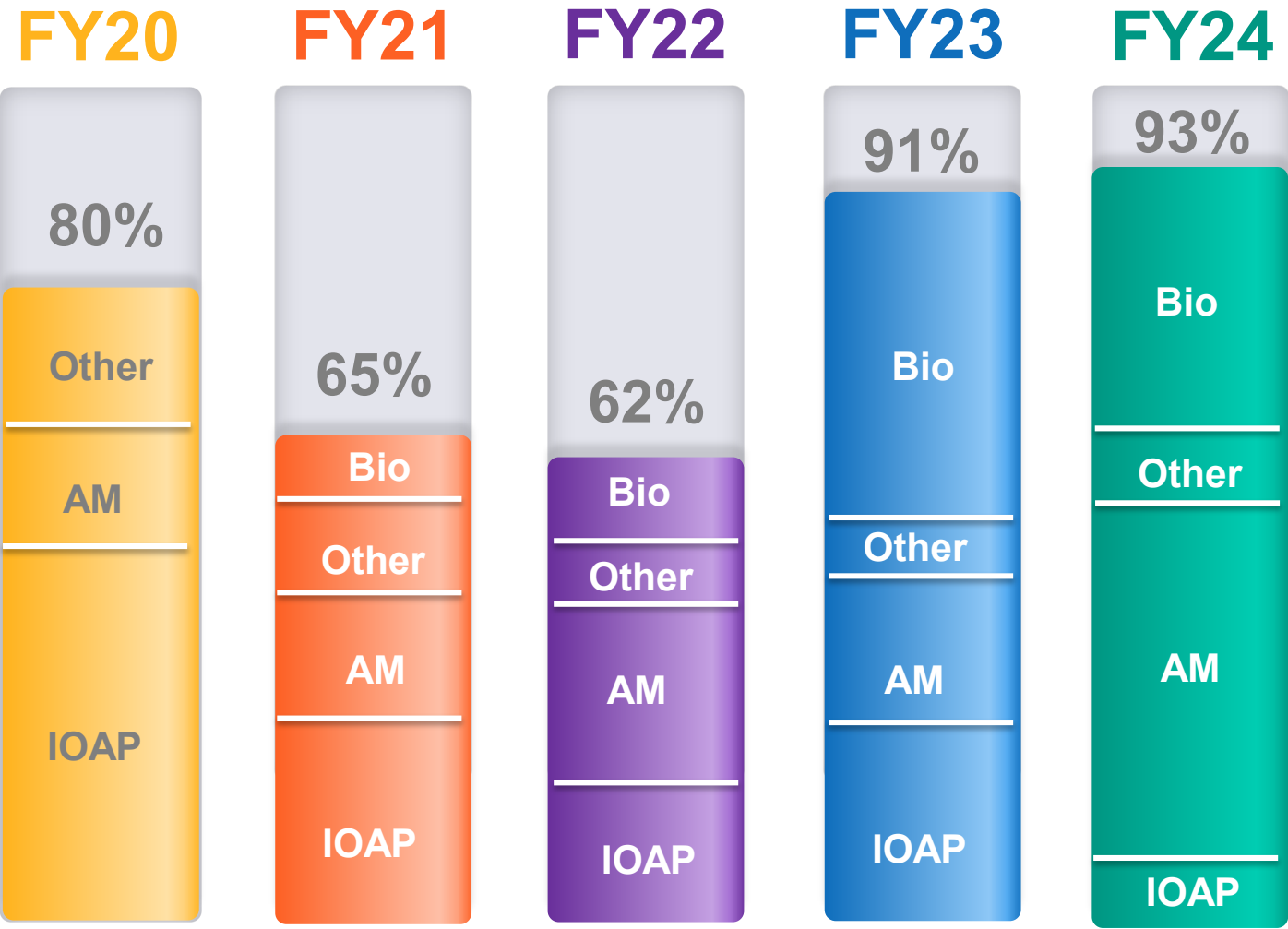
Development Community Programs Support Systems

Summary of 5-Year CIP

Capital Driver	5-Year CIP with 6.9%	5-Year CIP with 9.9%
IOAP Projects	\$313M	\$313M
Biosolids Improvements	\$206M	\$206M
Flood Pump Station Upgrades (capacity upgrades)	\$0	\$119M
Asset Management (rehabilitation and replacement)	\$271M	\$359M
Development & Expansion (new sewers and plant upgrades)	\$72M	\$125M
Customer Response Programs	\$17M	\$30M
Support Systems (facilities, fleet, IT)	\$46M	\$48M
TOTAL	\$925M	\$1,200M

Customer Response Programs include Drainage Response Initiative, Private Laterals Pilot Program, and Plumbing Modification Program

Summary of 6.9% CIP and Comparison to 9.9% Annual CIP



IOAP Projects

Represent 58% FY20
33% 5-Year CIP

Asset Management (AM)

Spending curtailed due to IOAP and Biosolids
22% 5-Year CIP

Other Projects

Includes development, support systems, and customer response programs. 15% 5-Year CIP

Biosolids

Greatest need for the wastewater systems
29% 5-Year CIP

Gray bars represent Annual CIP based on 9.9% rate increase.

The Bottom Line With 6.9%

FUNDED IN 6.9% CIP

Mandated IOAP
Projects



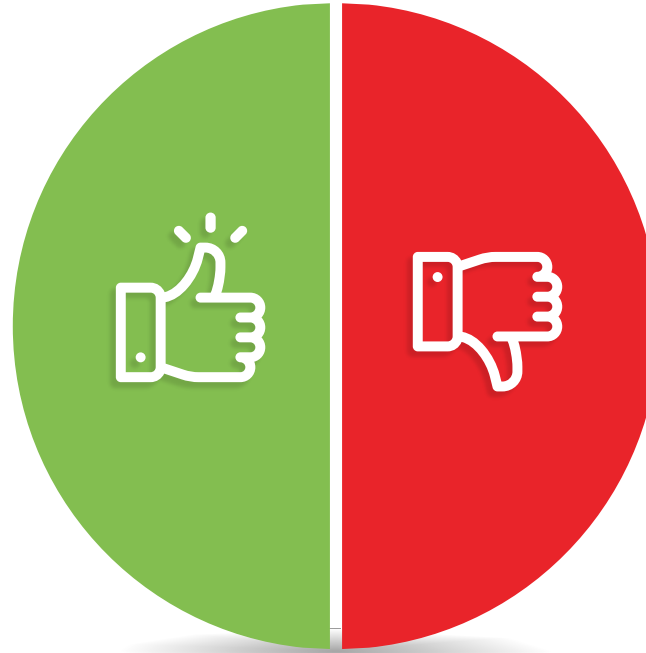
Morris Foreman
Biosolids Program



Running Assets To
Failure



Expansion of Hite
Creek & Floyds Fork



NOT FUNDED IN 6.9% CIP



Preventative
Maintenance of Assets



Utility Growth &
Expansion



Flood Pump
Stations Upgrades



Drainage Response
Initiative



Plumbing Modification
Program

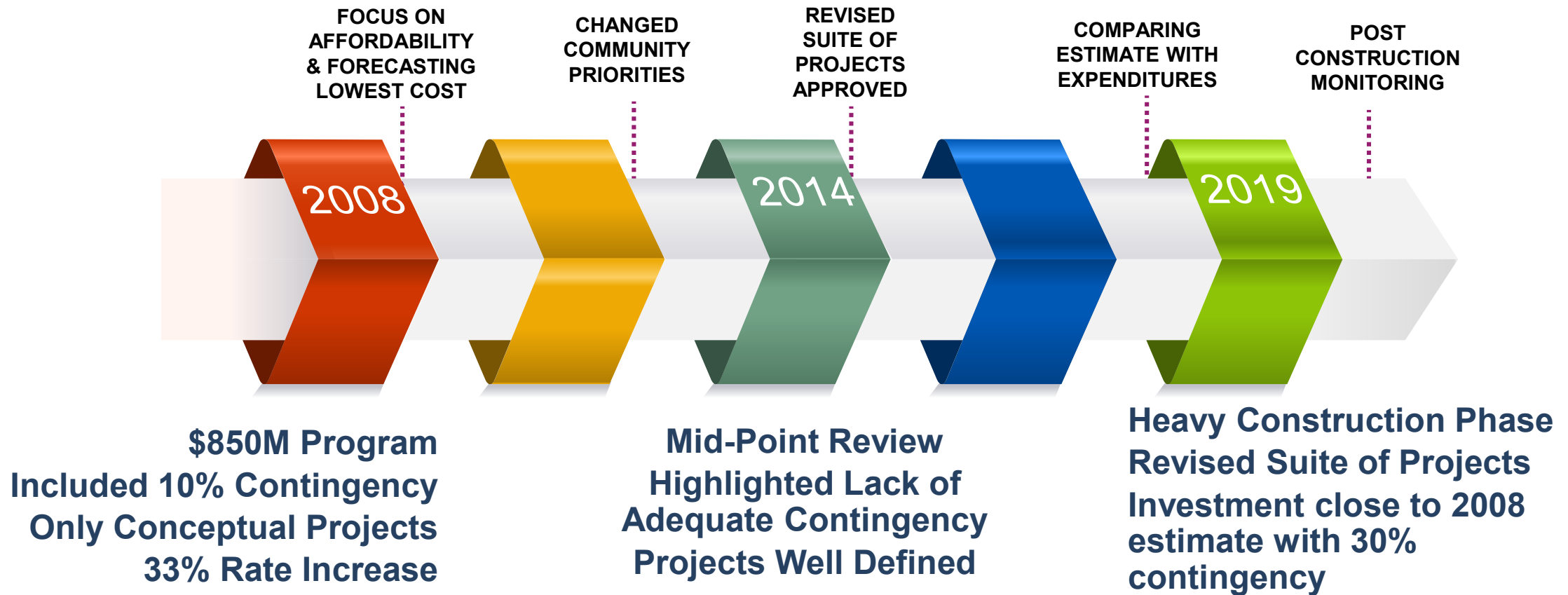
Questions?

IOAP Cost Estimate Update

April 8, 2019



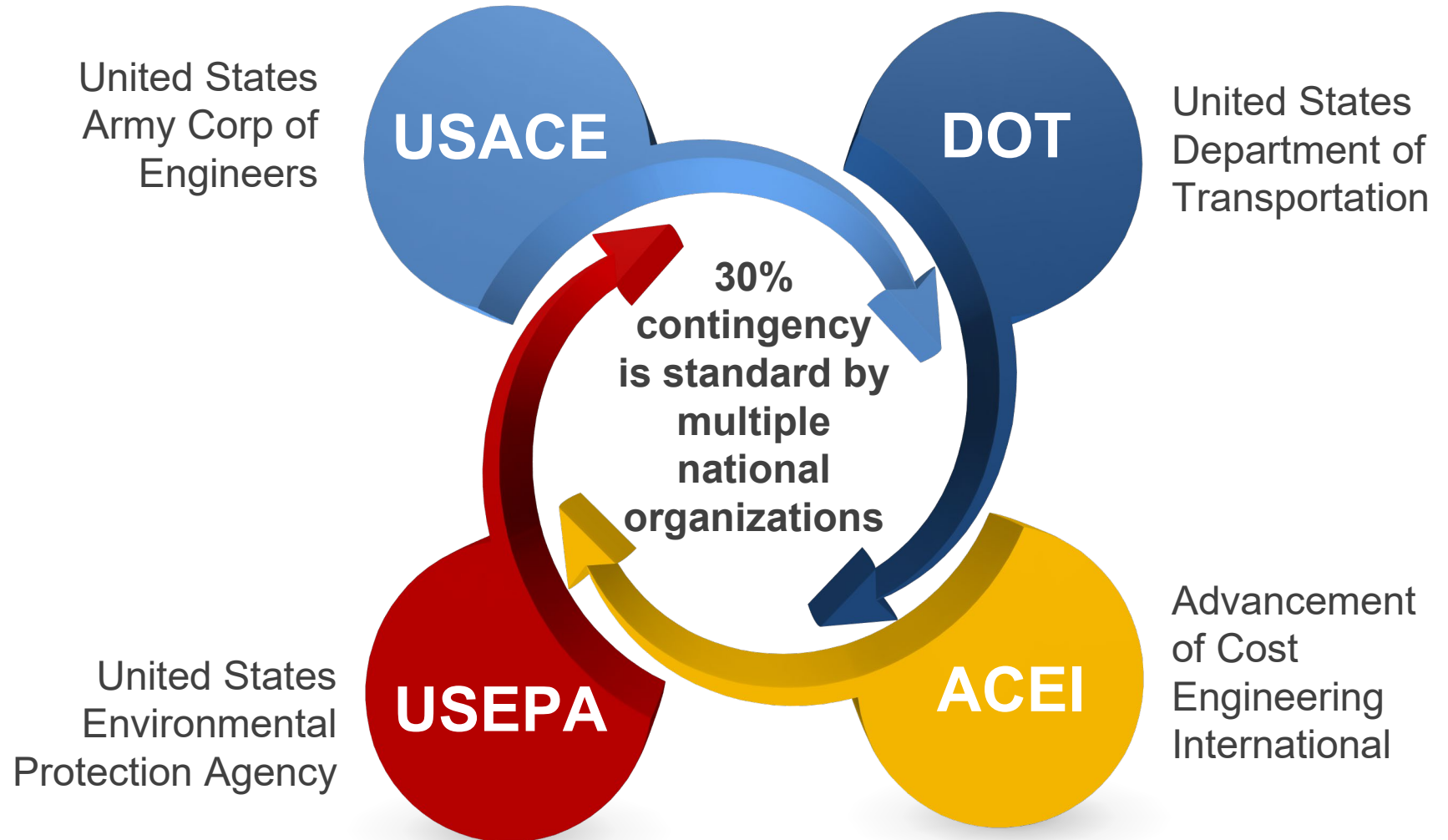
2008 IOAP Benchmark was Affordability-Driven Not Representative of Industry Standard Estimating Procedures



Industry Standard Estimating Procedures

Given the conceptual nature of the engineering estimates at the time of submittal, at least 30% contingency should have been added

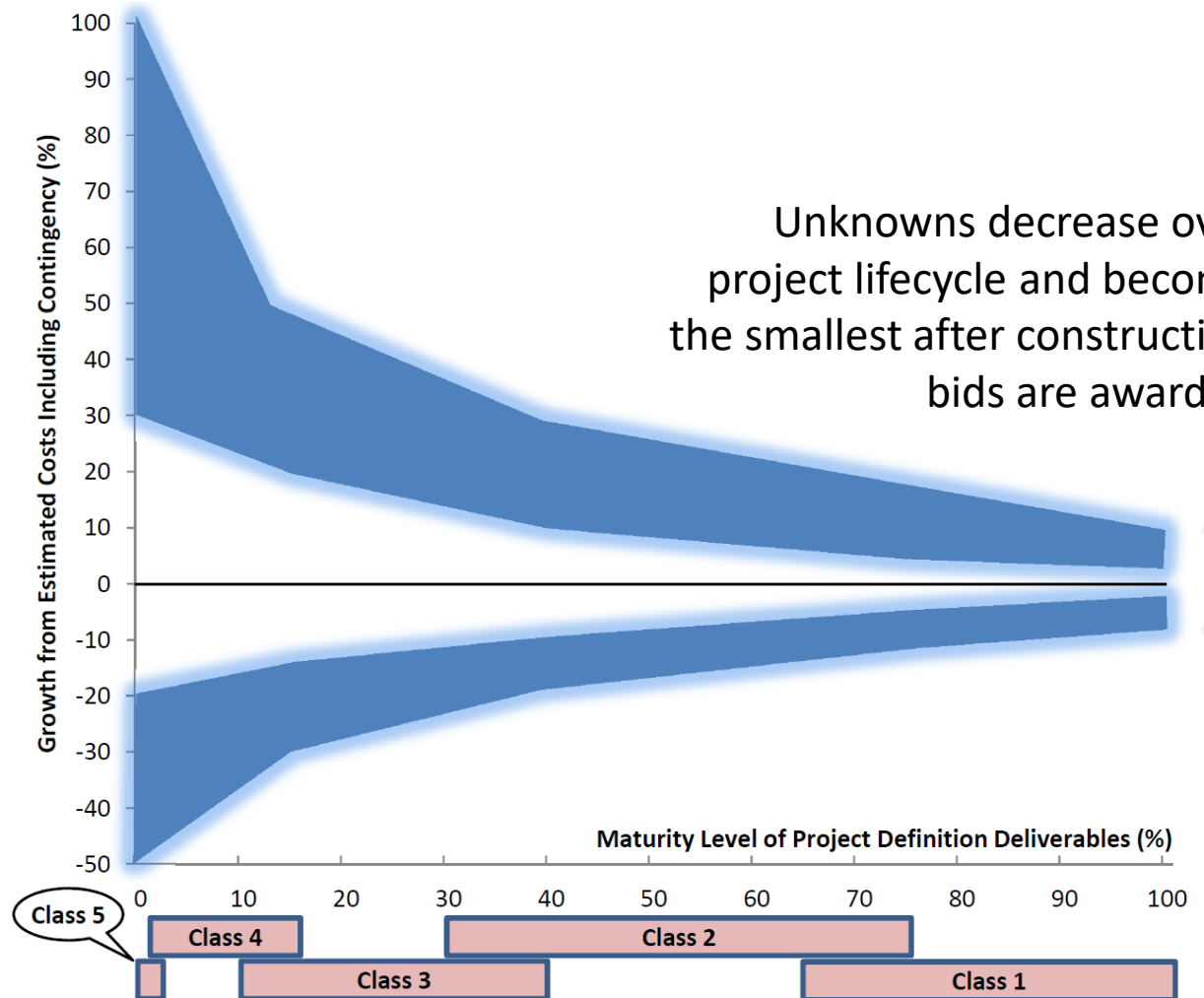
$\$850\text{M} + 20\% =$
\$1.02B
(30% contingency)



Contingency % Indicates Level of Uncertainty (Unknowns)

Most unknowns in conceptual planning phase (Class 5 estimate)

- Location or subterranean conditions
- Capacity and size requirements
- Advances in Best Available Technology
- Environmental impact mitigation
- Future regulatory requirements
- Stakeholder involvement



The 2008 IOAP estimates were flawed - included 10% contingency vs. 30%.

Projected IOAP Cost at Completion of Program

Original IOAP Estimate \$850M

Added Standard
Contingency \$170M



With standard contingencies, the original IOAP Estimate would have been **\$1.02B**.

Paid to Date \$820M

In Progress
\$221M

Future
Projects
\$109M



The current IOAP estimate based on actual projects is **\$1.15B**.

*Assumes 20%-30%
contingency for
future projects*

Adaptive Management IOAP Approach

Adaptive management pros/cons

- Maximize individual projects for overall system benefits
- No “backsliding” on system-wide capture
- Project costs not considered by EPA for approval

IOAP project modification examples since 2012 IOAP approval:

- 2015 Basin Balancing (resizing of 5 basins)
 - Southwestern Parkway Basin (11.07 MG to 17.5 MG)
 - Original Estimate \$23M
 - Estimate plus Contingency \$28M
 - Estimate at Completion \$85M
- Nightingale Pump Station & Basin (2.7 MG to 7.7 MG, 33 MGD)
 - Original Estimate \$19M
 - Estimate plus Contingency \$23M
 - Estimate at Completion \$38M
- 2018 Upper Middle Fork #2 PS Improvements (eliminated basin, 9.0 MGD to 30.0 MGD)
 - Original Estimate \$20M
 - Estimate plus Contingency \$24M
 - Estimate at Completion \$70M

Large Variances from Initial Conceptual Estimates

CAMP TAYLOR PROJECT SUITE

Original Estimate \$38M

Estimate plus Contingency \$46M

Estimate at Completion \$55M

Work in existing neighborhoods

Excavation in hard rock with narrow right-of-way and buried utilities.

Missing/inaccurate record drawings resulted in construction challenges

Work on private property to reconnect was underestimated.

LOGAN AND BRECKENRIDGE STREET STORAGE BASIN

Original Estimate \$56M

Estimate plus Contingency \$67M

Estimate at Completion \$93M

Community pressure changed “leave behind” to buried basin

Eliminated Calvary basin and increased conveyance to Logan Basin.

Contractor capacity during Bridges project led to unfavorable bid.

Project change came as construction change order.

OHIO RIVER PROTECTION TUNNEL BUNDLE

Original Estimate \$122M

Estimate plus Contingency \$146M

Estimate at Completion \$271M

Solution emerged due to community pressure

- Bury Story & Main CSO basin
- Move collection lines for 13th & Rowan basin out of Main St
- Purchase contaminated land for basin

Preliminary estimate equal to cumulative impact of changes to basin projects when factoring in cost for long-term O&M.