

NYISO 2020 CONTINGENCY BUDGET OVERVIEW (IF NECESSARY)

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*Changes to this presentation from the materials posted for the September 25 BPWG meeting are noted in **RED**.*

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NYISO 2020 Budget: Highlights & Summary Information

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Timeline for Budget Cycle

- **September 9:** NYISO presents draft of 2020 budget to BPWG
- **September 16:** BOD meeting to review high level draft budget summary
- **September 25:** BPWG to present 2020 draft budget to Management Committee
- **September 25:** BPWG meeting
- **October 7:** BPWG meeting
- **October 14:** BOD meeting to review draft of 2020 budget
- **October 30:** Management Committee to vote on 2020 budget
- **November 19:** BOD approval of final 2020 budget

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Key Priorities and Projects for 2020

Grid Reliability and Resilience

- *Climate Change Impact & Resilience Study*
- *Reserves For Resource Flexibility*

Efficient Markets for a Grid in Transition

- *Ancillary Services Shortage Pricing*
- *BSM Renewables Exemption Study*
- *Comprehensive Mitigation Review*
- *Demand Curve Reset*
- *Enhanced Fast Start Pricing*
- *Expanding Capacity Eligibility*

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Key Priorities and Projects for 2020 (Cont.)

New Resource Integration

- *Distributed Energy Resources Participation Model*
- *Dual Participation*
- *Energy Storage Participation Model*
- *Hybrid Storage Model*

Integration of Public Policy

- *Carbon Pricing*

Key Priorities and Projects for 2020 (Cont.)

Technology and Infrastructure Investment

- *Alternate Control Room Renovations*
- *Cloud Computing Expansion*
- *Database Upgrade & Platform Migration*
- *EMS/BMS Operational Enhancements*
- *Enterprise Information Management – Phase IV*
- *Video Wall Light Engine Replacement*
- *Network Infrastructure Upgrade*
- *Technology End of Life Replacements*

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Key Priorities and Projects for 2020 (Cont.)

Physical and Cyber Security

- *Threat and Vulnerability Management*
- *Identity and Access Management*
- *Security Operations Management*
- *Supply Chain Security*
- *Information Sharing and Awareness*
- *Security Program and Compliance*
- *Physical Security Management*
- *Resource and Talent Development*

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Budget Highlights

- NYISO's draft 2020 budget totals **\$168.0M**, allocated across a forecast of **154.3** million MWh, for a Rate Schedule 1 charge/MWh of **\$1.089**.
- Comparatively, the 2019 budget was **\$168.2M**, allocated across **157.1** million MWh for a Rate Schedule 1 charge/MWh of **\$1.071**
- NYISO's draft 2020 budget represents a **0.12%** decrease in revenue requirement from the 2019 budget and a **1.78%** decrease in projected MWh, for an overall Rate Schedule 1 increase of **1.66%**

Budget Highlights: Historical Budget Comparisons

(in millions, excluding RS1/MWh charges)	2016 Budget	2017 Budget	2018 Budget	2019 Budget	2020 Draft	2020 vs. 2019
RS1 Rev. Requirement (in \$\$)	\$148.1	\$148.2	\$155.7	\$168.2	\$168.0	(\$0.2)
Budgeted MWh	<u>159.5</u>	<u>158.3</u>	<u>157.8</u>	<u>157.1</u>	<u>154.3</u>	(2.8)
RS1 Rev. Requirement (\$/MWh)	\$0.928	\$0.936	\$0.987	\$1.071	1.089	0.018
<i>RS1 Rev. Requirement (\$/MWh) including 2020 FERC Fee estimate of \$13.5M (FERC Fee is not part of NYISO budget or RS1) * For Illustrative Purposes Only</i>					\$1.176*	
RS1 Charge/MWh – Gross (before rebates from non-physical transactions):						
RS1 Charge/MWh: Purchasers @ 72%	\$0.668	\$0.674	\$0.711	\$0.771	\$0.784	
RS1 Charge/MWh: Sellers @ 28%	\$0.260	\$0.262	\$0.276	\$0.300	\$0.305	
RS1 Charge/MWh – Net (after estimated rebates from non-physical transactions):						
RS1 Charge/MWh: Purchasers @~ 68%	\$0.631	\$0.636	\$0.669	\$0.725	\$0.741	
RS1 Charge/MWh: Sellers @~26%	\$0.241	\$0.244	\$0.259	\$0.282	\$0.283	
RS1 Charge/MWh: Non-physical transactions @~6%	\$0.056	\$0.056	\$0.059	\$0.064	\$0.065	

Budget Highlights - Summary of Revenue Requirement Changes

2020 Rate Schedule 1 Revenue Requirement	\$168.0
2019 Rate Schedule 1 Revenue Requirement	<u>\$168.2</u>
Decrease in Rate Schedule 1 Revenue Requirement	(\$0.2)
Spending Reductions/Containment:	
Debt Service (Early Repayment)	(6.3)
Professional Fees (Consultants)	(0.7)
Miscellaneous Revenue	(0.3)
Meetings & Training	(0.3)
Telecommunications	(0.2)
Debt Interest	(0.2)
Building Services	(0.1)
External Legal Fees	(-)
Insurance	(-)
	<u>(\$8.1)</u>
Budget Increases:	
Reduction in Debt Proceeds*	5.7**
Computer Services	1.4
Capital***	0.2
Salaries and Benefits	0.5
Board of Directors Fees	0.1
	<u>\$7.9</u>

*Primarily driven by conclusion of the EMS/BMS System Upgrade project in 2019

**Represents 72% of total Budget Increases

***Funded by current year debt proceeds

Budget Highlights

NYISO continues to mitigate the impact of required spending level increases in 2020 by implementing a combination of Cost Reduction, Cost Containment and Cost Avoidance measures in virtually every budget category as follows:

Cost Reduction

Debt Service

Professional Fees

Miscellaneous Revenue

Meetings & Training

Telecommunications

Debt Interest

Building Services

Cost Containment

External Legal Fees

Corporate Insurance

Cost Avoidance

Computer Services

Capital

Salaries & Benefits

Budget Highlights - Cost Reductions

Debt Service – Decrease of \$6.3 from 2019

In 2019, after consultation with Market Participants, NYISO utilized the funds remaining from the 2018 budget cycle, totaling \$10.6M, to make early repayments on outstanding debt.

This action has reduced 2020 debt service costs by \$11.3M (\$10.6M principal payments and \$0.7M interest).

Funds remaining from 2018 budget cycle	\$ in millions
Spending under-run	\$5.8M
Rate Schedule 1 over-collection	<u>\$4.8M</u>
Total funds remaining	\$10.6M

Budget Highlights - Cost Reductions

Debt Service (continued)

In order to fix the interest rate on a portion of the 2018 budget facility loan, NYISO entered into an interest rate swap averaging 1.30%, to lock the all-in interest cost at an average of 2.25% over the life of the loan.

In order to fix the interest rate on a portion of the EMS/BMS project loan, NYISO entered into an interest rate swap averaging 1.12%, to lock the all-in interest cost at an average of 2.07% over the life of the loan.

As interest rates have increased, these actions have resulted in Debt Service savings and continue to mitigate the risk to NYISO's budget of future interest rate increases through the year 2021.

Budget Highlights - Cost Reductions

Debt Service (continued)

Effective January 1, 2019, NYISO executed a new five-year budget facility loan (2019-2023) to fund the cost of implementing Projects, technology enhancements, and facility improvements.

In order to fix the interest rate on a portion of the new budget facility loan, NYISO entered into an interest rate swap averaging 2.90%, to lock the all-in interest cost at an average of 3.57% over the life of the loan.

This action mitigates the risk to NYISO's budget of future interest rate increases through the year 2026.

Budget Highlights - Cost Reductions

Professional Fees – Decrease of **\$0.7M** from 2019

The decrease is primarily driven by a reduction in Product Enhancement consultants, accomplished utilizing a combination of strategies:

- Implementation of reduced cost solutions – *Enterprise Information Management IV (increased utilization of internal resources, extend project completion timeline)*
- Refined cost estimates – *Demand Curve Reset (resulting from competitive sourcing)*
- Project completion accelerated into 2019 – *Position Control System*
- Projects deferred to a future budget year – *Meter Service Entity, MIS Modernization, Energy Market Software Performance and Reserve Enhancements for Constrained Areas*

All other consulting costs have been held flat to 2019 levels, except those that are increasing per already-executed contracts and increases driven by additional workload requirements.

Refer to slide 33 for additional details

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Budget Highlights - Cost Reductions

Miscellaneous Revenue – Increase of \$0.3M from 2019

Miscellaneous revenue from interest income is projected to increase in 2020 due to the expectation of continued increases in interest earnings on cash deposits.

Increases in Miscellaneous Revenue decrease NYISO's overall revenue requirement.

Budget Highlights - Cost Reductions

Meetings & Training – Decrease of \$0.3M from 2019

Employee travel and training costs are projected to decrease by \$0.2M, primarily due to continued efforts to:

- Bundle employee training opportunities
- Use online training options
- Use internal training resources

In addition, the cost of Meetings has been reduced by \$0.1M as NYISO will not be hosting the IRC Conference in 2020.

Budget Highlights - Cost Reductions

Telecommunications – Decrease of \$0.2M from 2019

Additional cost savings are being realized from the Telephony Upgrade project that began in 2016 as well as other initiatives. The primary drivers include:

- Deployment of more cost effective digital connectivity
- Establishment of BYOD cell phone program

Since 2015, the Telecommunications budget has decreased by 26% (\$3.8M in 2015 vs. \$2.8M in 2020).

Budget Highlights - Cost Reductions

Debt Interest – Decrease of \$0.2M from 2019

2020 Debt Interest is projected to decrease by \$0.2M, primarily due to lower borrowing levels as compared to 2019 (\$33.3M in 2019 vs. \$27.6M in 2020) upon completion of the EMS/BMS System Upgrade project.

Building Services – Decrease of \$0.1M from 2019

The cost of Building Services is projected to decrease by \$0.1M, in anticipation of negotiating more favorable service contract agreements in 2020.

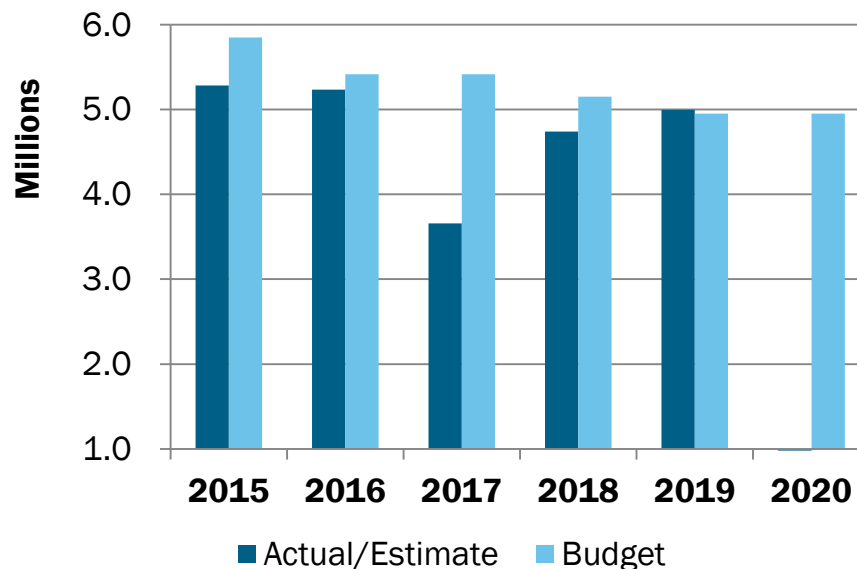
Budget Highlights - Cost Containment

External Legal Fees – No increase in 2020

NYISO continues to implement measures and develop internal staff to enable reduced reliance on outside counsel as much as possible. While the use of outside counsel may vary due to increases in litigation and legal support required for new initiatives, NYISO is proposing to hold the 2020 budget flat to 2019.

The following chart provides historical trends from 2015 to 2020.

Historical External Legal Fee Comparison



Budget Highlights - Cost Containment

Corporate Insurance – No increase in 2020

Based upon historical negotiation outcomes and actual experience, NYISO is proposing to hold the 2020 budget flat to 2019 levels.

2020 is the fourth consecutive year with no budget increase.

Budget Highlights - Cost Avoidance

Computer Services – Increase of ~~\$1.4M~~ from 2019:

The following actions have mitigated or avoided additional cost increases in 2020:

- ~~Hardware and Software maintenance reductions tied to EMS/BMS Go-Live – \$0.3M~~
- Hardware retirements resulting in maintenance reductions - \$0.2M
- Reduction in ABB off-site support contract - \$0.2M
- Software maintenance reductions resulting from support and subscription model changes - \$0.4M

Budget Highlights - Cost Avoidance

Capital – Increase of **\$0.2M** from 2019:

The following actions have mitigated or avoided additional cost increases in 2020:

Planned initiatives deferred to a future budget year:

- Corporate Continuity Phase II- **\$1.8M**
 - Reconfigure and furnish old Data Center space to office space and reconfigure parking lot
- Lifecycle Replacements - **\$0.8M**
 - Design and replacement of auto call distribution functions
 - Projectors for simulator training room, gallery and operator training room
- Security – **\$0.4M**
 - Replace Guard House at Krey Blvd.
 - Additional licenses for automated monitoring purposes

Increased utilization of Cloud Services: avoided increases in Capital costs for Planning Applications, Data Marts, NYISO Public Website and Database Upgrades

Budget Highlights - Cost Avoidance

Salaries & Benefits – Increase of \$0.5M from 2019:

The following actions have mitigated or avoided additional cost increases in 2020:

- Total authorized positions for 2020 are being held flat to 2019 levels. Any new positions will be sourced from existing vacancies.
- Employee health insurance plan changes effective for the 2020 plan year are projected to avoid additional employer cost increases of \$0.4M.
- Due to the projected impact of interest rates, actuarial assumptions, level of benefit payments, and funded status; NYISO will have a 2020 funding requirement of approximately \$1.0M. In order to avoid this incremental cost in 2020, this funding will be accelerated into 2019.
- NYISO’s 2019 budgeted vacancy rate is 5%, however, the average actual vacancy rate has been approximately 7.0% through August 2019. In 2020, NYISO is proposing to increase the budgeted vacancy rate to 6%, which reduces the Salary & Benefit budget by approximately \$1.0M.

2020 Budget Overview

(\$ in millions, except RS#1/MWh)	2020 Draft Budget		
	Enterprise	Projects	Total
Capital	\$2.6	\$4.4	\$7.0
Salaries & Benefits	82.0	13.2	95.2
Professional Fees (including Legal)	18.0	12.7	30.7
Building Services	6.6	-	6.6
Computer Services	18.7	0.7	19.4
Insurance	2.9	-	2.9
Telecommunications	2.8	-	2.8
Other Expenses (BOD, Travel/Training, NPCC Fees)	3.9	-	3.9
Subtotal: Current Year Needs	\$137.5	\$31.0	\$168.5
Debt Service	31.9	-	31.9
Subtotal: Cash Budget	\$169.4	\$31.0	\$200.4
Less: Miscellaneous Revenues	(5.2)	-	(5.2)
Less: Proceeds from Current Year Budget Debt	(2.6)	(25.0)	(27.6)
Add: Interest on Current Year Budget Debt	0.1	0.3	0.4
Total: Rate Schedule #1 Revenue Requirement in \$\$	\$161.7	\$6.3	\$168.0
Budgeted MWh (in millions)			154.3
Rate Schedule #1 Revenue Requirement in \$/MWh (budget)			\$1.089

2019 Budget Overview

(\$ in millions, except RS#1/MWh)	2019 Budget		
	Enterprise	Projects	Total
Capital	\$2.6	\$4.2	\$6.8
Salaries & Benefits	80.0	14.7	94.7
Professional Fees (including Legal)	17.0	14.4	31.4
Building Services	6.7	-	6.7
Computer Services	17.5	0.5	18.0
Insurance	2.9	-	2.9
Telecommunications	3.0	-	3.0
Other Expenses (BOD, Travel/Training, NPCC Fees)	<u>4.1</u>	-	<u>4.1</u>
Subtotal: Current Year Needs	\$133.8	\$33.8	\$167.6
Debt Service	38.2	-	38.2
Subtotal: Cash Budget	\$172.0	\$33.8	\$205.8
Less: Miscellaneous Revenues	(4.9)	-	(4.9)
Less: Proceeds from Current Year Budget Debt	(2.6)	(30.7)	(33.3)
Add: Interest on Current Year Budget Debt	<u>0.1</u>	<u>0.5</u>	<u>0.6</u>
Total: Rate Schedule #1 Revenue Requirement in \$\$	\$164.6	\$3.6	\$168.2
Budgeted MWh (in millions)			157.1
Rate Schedule #1 Revenue Requirement in \$/MWh (budget)			\$1.071

NYISO 2020 Budget: Detailed Line Item Information

Line Item Details - Capital

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Facility Improvements	\$0.8	\$1.5	(\$0.7)
Replacement of Existing Hardware	4.9	4.9	-
Software & Software Licenses (capitalized)	<u>1.3</u>	<u>0.4</u>	<u>0.9</u>
Total Capital Costs	\$7.0	\$6.8	\$0.2

Facility Improvements:

Facility improvements included within the 2020 budget include \$0.4M to replace 24 year old cooling towers at Krey Blvd., \$0.2M to replace original 50 year old electrical distribution panels at Carman Road and \$0.2M for design work to replace two end of life UPS systems and associated switch gear at Krey Blvd.

Replacement of Existing Hardware:

Replacement of computer hardware fluctuates from year to year and is driven by technology refresh schedules, planned obsolescence by technology vendors, and the specific mix of new computer requirements identified in the current year project schedule. The 2020 budget includes \$3.4M of new hardware required for proposed projects including, \$1.7M for Carman Road control room renovations, \$0.8M for Network Infrastructure Upgrade, \$0.6M for Database Upgrade & Platform Migration, \$0.2M for IT Service Management Improvements and \$0.1M to support the DER Participation Model project. The 2020 budget also includes \$1.0M of new hardware required for control room video wall light engine replacement at Krey Blvd. and \$0.5M for various end of life equipment replacements (Hotline Phone System, Wireless Infrastructure, Substation Routers).

Software and Software Licenses (capitalized):

Replacement of computer software and software licenses fluctuates from year to year and is driven by a change in the number of users as well as by software required as identified in the current year project schedule. The 2020 budget includes \$1.0M of new software required for proposed projects including, \$0.8M Database Upgrade and Platform Migration, \$0.1M for Customer Relationship Management Enhancements and \$0.1M for Access Management Enhancements. The 2020 budget also includes \$0.3M of new software required for storage expansion.

Line Item Details - Salaries & Benefits

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Base Salaries	\$66.1	\$65.7	\$0.4
Benefit Programs / At-Risk Compensation	24.0	23.7	0.3
Payroll Taxes	<u>5.1</u>	<u>5.3</u>	<u>(0.2)</u>
Total Salaries & Benefits	\$95.2	\$94.7	\$0.5

The ~0.5% increase in Salaries & Benefits is primarily driven by:

- No additional headcount proposed for 2020
- **\$0.4M** reflecting an average 3.0% merit and 0.5% promotion adjustment budget for NYISO employee compensation of \$1.4M, partially offset by an increase in assumed vacancies from 5% in 2019 to 6% in 2020 of \$1.0M
- **\$0.3M** due to increase in projected health insurance claim costs based on 2019 YTD experience of \$0.7M, partially offset by health benefit plan changes totaling \$0.4M
- **(\$0.2M)** reduction in estimated payroll taxes based on actual historical experience

See additional details on Salaries & Benefits on the following slides



Line Item Details - Salaries & Benefits (Cont.)

Headcount Summary		
Total Authorized FTE Positions for 2019	594	
Add: New Positions for 2020	<u>0</u>	There is no incremental headcount proposed for 2020. Any new positions will be filled by existing vacancies.
Total Authorized FTE Positions for 2020	594	
Less: Assumed Vacancies	<u>36</u>	Based on assumed vacancy rate of 6%
Equals: Total Budgeted FTE Positions	558	

Headcount Summary By Year			
	2020	2019	Change
Total Authorized FTE Positions	594	594	0
Less: Assumed Vacancies	<u>(36)</u>	<u>(30)</u>	<u>6</u>
Total Budgeted FTE Positions	558	564	(6)

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Line Item Details - Salaries & Benefits (cont.)

Merit & Promotion Adjustment

NYISO's 2020 draft budget includes an average salary increase to employee compensation of **3%** and a Promotion Adjustment budget of **0.5%**, which is proposed based upon a number of factors that include:

- National surveys ¹ show the median number for merit (excluding promotion adjustments) increases across the country to be **3.0%**
- Among our ISO peers, the planned budget for compensation adjustments in 2020 ranges between **3.0% - 3.75%** (inclusive of both merit and promotion adjustments)
- It is imperative that the NYISO continue to offer competitive salaries in order to attract and retain talent in our current environment
 - Increased competition for talent with tightening labor market (continued low unemployment rate of 3.7%² as of July 2019)
 - Costs (direct and indirect) of employee turnover can be significant

1 – WorldatWork, Salary.com and Mercer

2 – Bureau of Labor Statistics (BLS)

Line Item Details - Professional Fees

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Product Enhancement consultants (<i>several vendors</i>)	\$12.7	\$14.4	(\$1.7)
External legal fees	\$5.0	\$5.0	-
Market Monitoring	\$4.7	\$4.3	\$0.4
Misc. Professional Fees (all individually < \$250K)	\$1.4	\$1.3	\$0.1
Security guards	\$1.7	\$1.7	-
Reliability & Economic Planning	\$1.2	\$0.6	\$0.6
Information Technology & Facilities	\$0.6	\$0.6	-
Market design & related consulting	\$0.5	\$0.5	-
Ranger support & enhancements	\$1.1	\$1.1	-
Employee Benefits & Recruiting	\$1.1	\$1.2	(\$0.1)
External audits and Internal Audit co-sourcing	\$0.7	\$0.7	-
Total Professional Fees	\$30.7	\$31.4	(\$0.7)
<p>Product Enhancement Consultants: The expected decrease is primarily driven by reduced consulting support for the Enterprise Information Management IV project and the current mix of consulting support required by the 2020 proposed projects (See additional details on 2020 proposed product enhancements in a separate presentation posted for the 10/7/2019 BPWG meeting).</p>			
<p>Market Monitoring: The increase of \$0.4M is projected due to a rate increase from the previous three-year contact and software licensing and hardware requirements to meet cybersecurity obligations.</p>			
<p>Reliability & Economic Planning: The increase of \$0.6M is required to facilitate timely completion of Class Year 2019, which has the largest membership ever experienced by the NYISO with 119 projects. In comparison, the next largest Class Year was 2017 with 28 projects.</p>			

Line Item Details - Building Services

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Building Services	\$6.6	\$6.7	(\$0.1)

NYISO includes building service contracts, repairs & maintenance, and membership dues & subscriptions within this budget category.

The 2020 budget is proposed to decrease by \$0.1M, in anticipation of favorable service contract renewal negotiations.

Line Item Details - Computer Services

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Computer Services Costs	\$19.4	\$18.0	\$1.4

NYISO includes hardware and software maintenance, software licenses (non-capitalized), computer supplies, and minor equipment purchases within this budget category.

The continued addition of new hardware, software, software licenses, and technology upgrades continues to drive increases in this budget category as follows:

- \$0.4M increase in software maintenance primarily due to Amazon Web Services infrastructure/service growth and cybersecurity enhancements, partially offset by elimination of EMS/BMS post go-live maintenance
- \$0.3M increase in maintenance and software costs associated with 2020 proposed projects (Database Upgrade & Platform Migration, EIM Data Integration)
- ~~\$0.5M~~ increase in hardware maintenance primarily due to new hardware additions, partially offset by ~~elimination of EMS/BMS post go-live maintenance and~~ various hardware retirements
- \$0.2M increase in software licenses for multiple security and network related products

Line Item Details - Insurance

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Insurance	\$2.9	\$2.9	-

Based on the continued success of policy renewal negotiations and historical experience, NYISO is proposing to hold flat its 2020 budget for insurance premiums for the 4th consecutive year (2017 – 2020).

Line Item Details - Telecommunications

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Telecommunications	\$2.8	\$3.0	(\$0.2)

As a result of the multi-year Telephony System Upgrade project and additional initiatives, NYISO is projecting cost reductions of \$0.2M in 2020:

- Deployment of more cost effective digital connectivity
- Savings recognized by implementation of employee BYOD cell phone program

Line Item Details - Other Expenses

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Travel, Meetings, Training Costs	\$2.0	\$2.3	(\$0.3)
BOD Fees and Expenses	\$1.6	\$1.5	0.1
NPCC Fees	<u>\$0.3</u>	<u>\$0.3</u>	-
Total Other Expenses	\$3.9	\$4.1	(\$0.2)

Employee Travel and Training costs are projected to decrease by \$0.2M, primarily due to continued efforts to bundle employee training opportunities, maximize use of online training options, and use of internal training resources.

In addition, the cost of Meetings has been reduced by \$0.1M as NYISO will not be hosting the IRC Conference in 2020.

Based upon changes to Board of Director compensation that became effective April 1, 2019, fees are expected to increase by approximately \$0.1M.



Line Item Details - Debt Service

Annual Principal and Interest Repayments ** (\$ in millions)

Debt Facility & Repayment Period	Borrowings	2016	2017	2018	2019	2020	2021	2022	2023	2024
2005 KCC Bldg Mortgage & Renov. (20 yrs)	\$24.8M	\$2.1	\$2.1	\$2.1	\$2.0	\$2.0	\$2.0	\$2.0	\$1.9	\$1.9
Infrastructure Master Plan Mortgage (19 yrs)	\$45.0M	\$4.4	\$4.3	\$4.2	\$4.1	\$3.9	\$3.8	\$3.8	\$3.6	\$3.5
2013 Budget Loan (3 yrs)	\$24.2M	\$3.0	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2014 Budget Loan (3 yrs)	\$25.0M	\$16.7	\$0.6	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2015 Budget Loan (3 yrs)	\$25.0M	\$8.8	\$15.9	\$1.0	\$-	\$-	\$-	\$-	\$-	\$-
2016 Budget Loan (3 yrs)	\$25.0M	\$0.3	\$8.9	\$12.9	\$4.2	\$-	\$-	\$-	\$-	\$-
2017 Budget Loan (3 yrs)	\$24.7M	\$-	\$0.4	\$9.0	\$16.9	\$-	\$-	\$-	\$-	\$-
2018 Budget Loan (3 yrs)	\$25.3M	\$-	\$-	\$0.3	\$9.0	\$8.8	\$8.5	\$-	\$-	\$-
2016-2019 EMS/BMS System Upgrade	\$30.0M Est.	\$-	\$2.4	\$6.1	\$11.6	\$5.6	\$4.5	\$1.2	\$-	\$-
2019 Budget Loan (3 yrs)	\$30.0M Est.	\$-	\$-	\$-	\$0.5	\$10.9	\$10.6	\$10.2	\$-	\$-
2020 Budget Loan (3 yrs)	\$27.6M Est.	\$-	\$-	\$-	\$-	\$0.4	\$10.1	\$9.7	\$9.4	\$-
2021 Budget Loan (3 yrs)	\$28.0M Est.	\$-	\$-	\$-	\$-	\$-	\$0.5	\$10.2	\$9.9	\$9.5
2022 Budget Loan (3 yrs)	\$27.0M Est.	\$-	\$-	\$-	\$-	\$-	\$-	\$0.5	\$9.8	\$9.5
2023 Budget Loan (3 yrs)	\$27.4M Est.	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$0.5	\$10.0
Bank Fees	n/a	\$0.5	\$0.4	\$0.4	\$0.7	\$0.7	\$0.7	\$0.7	\$0.7	\$0.7
Total Debt Service Payments		\$35.8	\$35.0	\$36.0	\$49.0	\$32.3	\$40.7	\$38.3	\$35.8	**

Approximately \$27M - \$30M is expected to be borrowed on average each year during 2019 – 2023, representing the annual cost of implementing Projects, technology enhancements, and facility improvements. ** Totals are not shown in 2024 as the annual principal and interest repayments on the 2024 Budget Loan are not known at this time.

Line Item Details - Debt Service (Cont.)

Principal Balance Outstanding at December 31 (\$ in millions)									
Debt Facility	2016	2017	2018	2019	2020	2021	2022	2023	2024
2005 KCC Bldg Mortgage & Renov.	\$14.4	\$13.2	\$11.9	\$10.6	\$9.2	\$7.6	\$6.0	\$4.3	\$2.5
Infrastructure Master Plan Mortgage	\$38.6	\$35.9	\$33.3	\$30.7	\$28.0	\$25.4	\$22.7	\$20.0	\$17.4
2015 Budget Loan	\$16.7	\$1.0	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2016 Budget Loan	\$25.0	\$16.7	\$4.2	\$-	\$-	\$-	\$-	\$-	\$-
2017 Budget Loan	\$-	\$24.7	\$16.5	\$-	\$-	\$-	\$-	\$-	\$-
2018 Budget Loan	\$-	\$-	\$25.3	\$16.9	\$8.4	\$-	\$-	\$-	\$-
2016-2019 EMS/BMS System Upgrade	\$6.7	\$14.6	\$18.6	\$10.9	\$5.6	\$1.2	\$-	\$-	\$-
2019 Budget Loan	\$-	\$-	\$-	\$30.0	\$20.0	\$10.0	\$-	\$-	\$-
2020 Budget Loan	\$-	\$-	\$-	\$-	\$27.6	\$18.4	\$9.2	\$-	\$-
2021 Budget Loan	\$-	\$-	\$-	\$-	\$-	\$28.0	\$18.7	\$9.3	\$-
2022 Budget Loan	\$-	\$-	\$-	\$-	\$-	\$-	\$27.0	\$18.0	\$9.0
2023 Budget Loan	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$27.4	\$18.3
Total Principal Outstanding	\$101.4	\$106.1	\$109.8	\$99.1	\$98.8	\$90.6	\$83.6	\$79.0	**

**** Totals are not shown in 2024 as the principal balance outstanding on the 2024 Budget Loan is not known at this time.**

Line Item Details - Misc. Revenue

(\$ in millions)	2020 Draft	2019 Budget	\$ Change
Total Miscellaneous Revenues	\$5.2	\$4.9	\$0.3

Miscellaneous revenue from interest income is being increased in 2020 due to the expectation of continued increases in interest earnings on cash deposits.

2021 - 2024 Draft Budget: Projections

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Rate Schedule 1 Summary

(\$ in millions, except RS#1/MWh)	Budget Drafts				
	2020 Draft	2021 Projection	2022 Projection	2023 Projection	2024 Projection
Total: Rate Schedule #1 Revenue Requirement (in \$\$)	\$168.0	\$183.1	\$184.1	\$186.2	\$188.6
Budgeted MWh (in millions)	154.3	153.0	151.4	150.0	149.0
Rate Schedule #1 Revenue Requirement in (\$/MWh)	\$1.089	\$1.197	\$1.216	\$1.241	\$1.266

The 2021-2024 budget drafts presented above are advisory only. Actual budgets for these years will be developed and discussed with Market Participants annually.

Budget Projections By Category

(\$ in millions, except RS#1/MWh)	Budget Drafts				
	2020 Draft	2021 Projection	2022 Projection	2023 Projection	2024 Projection
Capital	\$7.0	\$8.6	\$6.1	\$5.4	\$5.0
Salaries & Benefits	95.2	99.8	104.1	108.7	112.8
Professional Fees (including Legal)	30.7	30.5	30.4	30.4	30.9
Building Services	6.6	6.8	7.0	7.2	7.3
Computer Services	19.4	19.8	20.0	20.5	21.1
Insurance	2.9	2.9	3.0	3.1	3.2
Telecommunications	2.8	2.8	2.9	3.0	3.1
Other Expenses (BOD, Travel/Training, NPCC Fees)	3.9	4.0	4.1	4.3	4.3
Subtotal: Current Year Needs	\$168.5	\$175.2	\$177.6	\$182.6	\$187.7
Debt Service	31.9	40.2	37.8	35.3	35.1
Subtotal: Cash Budget	\$200.4	\$215.4	\$215.4	\$217.9	\$222.8
Less: Miscellaneous Revenues	(5.2)	(4.8)	(4.8)	(4.8)	(4.8)
Less: Proceeds from Current Year Budget Debt	(27.6)	(28.0)	(27.0)	(27.4)	(30.0)
Add: Interest on Current Year Budget Debt	0.4	0.5	0.5	0.5	0.6
Total: Rate Schedule #1 Revenue Requirement in \$\$	\$168.0	\$183.1	\$184.1	\$186.2	\$188.6
Budgeted MWh (in millions)	154.3	153.0	151.4	150.0	149.0
Rate Schedule #1 Revenue Requirement in \$/MWh (budget)	\$1.089	\$1.197	\$1.216	\$1.241	\$1.266

Major Assumptions

Cost Category	Major Assumptions for 2020 and 2021 - 2024
Capital	<ul style="list-style-type: none"> Purchases of Hardware and Software are estimated as follows: 2020 = \$6.2M 2021 = \$4.7M 2022 = \$1.9M 2023 = \$1.8M 2024 = \$1.7M Facility Improvements are estimated as follows: 2020 = \$0.8M 2021 = \$3.9M 2022 = \$4.2M 2023 = \$3.6M 2024 = \$3.3M
Salaries & Benefits	<ul style="list-style-type: none"> Total budgeted headcount as follows: 594 FTEs for 2020, 600 FTEs for 2021, 606 FTEs for 2022, 613 FTEs for 2023, and 620 for 2024 Estimated vacancy factor is 6% in 2020 - 2024 Average annual salary increase of 3% and annual promotion adjustment increase of 0.5% in 2020 - 2024 Assumes 4% health insurance cost increase in 2020, 5% annual increase in health insurance cost and \$0.5M pension plan funding in 2021 – 2024
Professional Fees (including Legal)	<ul style="list-style-type: none"> Assumes a decrease of \$0.7M in 2020 primarily driven by the Enterprise Information Management – Data Integration Phase IV project - increased utilization of internal resources and extending the project completion timeline Assumes a consistent level of project and non-project consulting support ranging from \$30.5M in 2021 to \$30.9M in 2024
Building Services	<ul style="list-style-type: none"> Assumes a decrease of \$0.1M in 2020 and assumes annual cost increases with budgets ranging from \$6.8M in 2021 to \$7.3M in 2024
Computer Services	<ul style="list-style-type: none"> Assumes an increase of \$1.4M in 2020 primarily due to AWS infrastructure/service growth, increases associated with 2020 proposed projects and maintenance on new hardware and software additions Assumes an increase of \$0.7M in 2021 primarily due to ABB software coming off of warranty Assumes continued increases due to new software agreements and expected maintenance cost increases in existing agreements with budgets ranging from \$20.0M in 2022 to \$21.1 in 2024
Insurance	<ul style="list-style-type: none"> Assumes no increase in 2020 and assumes minor annual cost increases with budgets ranging from \$2.9M in 2021 to \$3.2M in 2024
Telecommunications	<ul style="list-style-type: none"> Assumes a decrease of \$0.2M in 2020 and assumes minor annual cost increases with budgets ranging from \$2.8M in 2021 to \$3.1M in 2024
Other Expenses	<ul style="list-style-type: none"> Assumes a decrease of \$0.2M in 2020 and assumes minor annual cost increases with budgets ranging from \$4.0M in 2021 to \$4.3M in 2024
Debt Service	<ul style="list-style-type: none"> Annual borrowings (with 3-year repayment terms) to fund capital and product enhancements are anticipated to be \$27.6M for 2020, \$28.0M for 2021, \$27.0M for 2022, \$27.4M for 2023 and \$30.0M for 2024 (Assumes replacement Budget Facility effective January 1, 2024) Interest rates for most borrowings expected to be between 2.0% – 6.0% No reductions for “early payments” on debt from potential savings on annual budget or RS1 overcollections have been included

2021 Budget Summary

■ In Summary

- NYISO’s draft 2021 advisory budget totals \$183.1M, allocated across a forecast of 153.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.197. Comparatively, the 2020 draft budget totals \$168.0M, allocated across a forecast of 154.3 million MWh, for a Rate Schedule 1 charge/MWh of \$1.089
- NYISO’s draft 2021 advisory budget represents a 9.0% increase in Revenue Requirement from the 2020 draft budget and a 0.84% decrease in projected MWh for an overall Rate Schedule 1 increase of 10.0%

■ Primary Drivers

- The primary drivers of a \$15.1M increase in the RS1 Revenue Requirement from 2020 to 2021 are as follows:
 - \$8.3M increase in debt service cost - In 2020 debt service was reduced by \$11.3M as NYISO utilized the funds remaining from the 2018 budget cycle to make additional principal payments on the 2017 budget facility. No reductions for early repayments on debt from potential savings on annual budget or RS1 over-collections have been included in advisory budgets
 - \$4.6M increase in Salaries & Benefits driven primarily by a 3.5% annual merit compensation and promotion adjustments, the addition of 6 incremental FTEs, 5% increase in health insurance costs and \$0.5M in pension funding
 - \$1.0M increase in Capital primarily driven by a multi-year Alternate Control Room renovation project
 - \$0.7M increase in Computer Services primarily due to ABB Software coming off of warranty in 2021

2022 Budget Summary

■ In Summary

- NYISO's draft 2022 advisory budget totals \$184.1M, allocated across a forecast of 151.4 million MWh, for a Rate Schedule 1 charge/MWh of \$1.216. Comparatively, the draft 2021 advisory budget totals \$183.1M, allocated across a forecast of 153.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.197
- NYISO's draft 2022 advisory budget represents a 0.55% increase in Revenue Requirement from the 2021 draft advisory budget and a 1.0% decrease in projected MWh for an overall Rate Schedule 1 increase of 1.55%

■ Primary Drivers

- The primary drivers of a \$1.0M increase in the RS1 Revenue Requirement from 2021 to 2022 are as follows:
 - \$4.3M increase in Salaries & Benefits driven primarily by 3.5% annual merit compensation and promotion adjustments, the addition of 6 incremental FTEs and a 5% increase in health insurance costs
 - \$1.0M decrease in Debt Proceeds primarily due to anticipated funding requirements for 2022 capital and product enhancements, partially offset by,
 - \$2.5M decrease in Capital primarily due to completion of the Alternate Control Room renovation project in 2021
 - \$2.4M decrease in Debt Service primarily due to reduced payments on the EMS/BMS project loan

2023 Budget Summary

■ In Summary

- NYISO’s draft 2023 advisory budget totals \$186.2M, allocated across a forecast of 150.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.241. Comparatively, the draft 2022 advisory budget totals \$184.1M, allocated across a forecast of 151.4 million MWh, for a Rate Schedule 1 charge/MWh of \$1.216
- NYISO’s draft 2023 advisory budget represents a 1.1% increase in Revenue Requirement from the 2022 draft advisory budget and a 0.9% decrease in projected MWh for an overall Rate Schedule 1 increase of 2.0%

■ Primary Drivers

- The primary drivers of a \$2.1M increase in the RS1 Revenue Requirement from 2022 to 2023 are as follows:
 - \$4.6M increase in Salaries & Benefits driven primarily by 3.5% annual merit compensation and promotion adjustments, the addition of 7 incremental FTEs and a 5% increase in health insurance costs
 - \$0.5M increase in Computer Services primarily due to new software agreements and expected maintenance cost increases in existing agreements, partially offset by,
 - \$0.7M decrease in Capital primarily driven by anticipated technology refresh schedules and the mix of hardware and software requirements in support of the project schedule
 - \$2.5M decrease in Debt Service primarily due to the final year of EMS/BMS project loan repayments in 2022

2024 Budget Summary

■ In Summary

- NYISO’s draft 2024 advisory budget totals \$188.6M, allocated across a forecast of 149.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.266. Comparatively, the draft 2023 advisory budget totals \$186.2M, allocated across a forecast of 150.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.241
- NYISO’s draft 2024 advisory budget represents a 1.3% increase in Revenue Requirement from the 2023 draft advisory budget and a 0.66% decrease in projected MWh for an overall Rate Schedule 1 increase of 2.0%

■ Primary Drivers

- The primary drivers of a \$2.4M increase in the RS1 revenue requirement from 2023 to 2024 are as follows:
 - \$4.1M increase in Salaries & Benefits driven primarily by 3.5% annual merit compensation and promotion adjustments, the addition of 7 incremental FTEs and a 5% increase in health insurance costs
 - \$0.5M increase in Professional Fees primarily due to expected cost increases in new and existing agreements
 - \$0.6M increase in Computer Services primarily due to new software agreements and expected maintenance cost increases in existing agreements, partially offset by,
 - \$2.6M increase in Debt Proceeds primarily due to anticipated funding requirements for 2024 capital and product enhancements

APPENDIX

Peer Comparison

(\$ in millions)					
	Revenue Requirement *			Other Information *	
ISO/RTO	2020 Revenue Req. (In \$\$)	Estimated 2020 MWh throughput (In millions of MWh)	2020 revenue req. (In \$/MWh)	Debt outstanding at 12/31/20	Authorized FTEs at 12/31/20
MISO	Not Yet Available				
PJM	Not Yet Available				
ERCOT	\$268.3M	401.2	\$0.555	\$47.0M	770
CAISO	Not Yet Available				
ISO-NE	\$199.5M	146.7	\$1.360	\$96.0M	584
IESO	\$194.6M	160.0	\$1.242	Not Available	818
NYISO	\$168.2M	154.3	\$1.089	\$98.7M	594
*All amounts are DRAFT, and may be subject to change as each ISO/RTO completes its 2020 budget approval process					

Questions?

We are here to help. Let us know if we can add anything.

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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