

NYISO 2019 BUDGET OVERVIEW

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NYISO 2019 Budget: Highlights & Summary Information

Timeline for Budget Cycle

- **September 7:** NYISO presents draft of 2019 budget to BPWG
- **September 17:** BOD meeting to review high level draft budget summary
- **September 26:** BPWG to present 2019 draft budget to Management Committee
- **October 5:** BPWG meeting
- **October 15:** BOD meeting to review draft of 2019 budget
- **October 31:** Management Committee to vote on 2019 budget
- **November 13:** BOD approval of final 2019 budget

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Key Priorities and Projects for 2019

- EMS / BMS System Upgrade
- Energy Storage Resources
- Carbon Pricing
- More Granular Operating Reserves
- Enhancing Fuel and Energy Security
- Ancillary Services Shortage Pricing
- Climate Change Impact and Resilience Study

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Key Priorities and Projects for 2019 (Cont.)

- DER Participation Model
- Enterprise Information Management – Phase IV
- Financial Systems Strategic Vision Planning
- Comprehensive System Planning Process Review
- Demand Curve Reset
- Network Infrastructure Upgrade
- ICAP AMS Redesign Phase III
- Constraint Specific Transmission Shortage Pricing

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Key Priorities & Projects for 2019 (Cont.)

Security program enhancements that will continue to improve NYISO's ability to manage escalating security risks:

- Supply chain security improvements
- Enhancements in threat and vulnerability management
- Enhancements to the Cyber Security Operations Center capabilities
- Access management enhancements
- Physical access control system upgrades
- Application security enhancements
- System hardening enhancements

Budget Highlights

- NYISO's draft 2019 budget totals **\$168.2M**, allocated across a forecast of **157.1** million MWh, for a Rate Schedule 1 charge/MWh of **\$1.071**. Comparatively, the 2018 budget was **\$155.7M**, allocated across **157.81** million MWh for a Rate Schedule 1 charge/MWh of **\$0.987**
- NYISO's draft 2019 budget represents a **8.03%** increase in revenue requirement from the 2018 budget and a **0.45%** decrease in projected MWh, for an overall Rate Schedule 1 increase of **8.51%**

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Budget Highlights: Historical Budget Comparisons

(in millions, excluding RS1/MWh charges)	2015 Budget*	2016 Budget	2017 Budget	2018 Budget	2019 Draft	2019 vs. 2018
RS1 Rev. Requirement (in \$\$)	\$148.4	\$148.1	\$148.2	\$155.7	\$168.2	\$12.5
Budgeted MWh	<u>165.8</u>	<u>159.5</u>	<u>158.3</u>	<u>157.8</u>	<u>157.1</u>	<u>(0.7)</u>
RS1 Rev. Requirement (\$/MWh)	\$0.895	\$0.928	\$0.936	\$0.987	\$1.071	\$0.084
* Adjusted to exclude FERC Fees from RS1 \$ and \$/MWh requirement						
RS1 Charge/MWh – Gross (before rebates from non-physical transactions):						
RS1 Charge/MWh: Purchasers @ 72%	\$0.644	\$0.668	\$0.674	\$0.711	\$0.771	
RS1 Charge/MWh: Sellers @ 28%	\$0.251	\$0.260	\$0.262	\$0.276	\$0.300	
RS1 Charge/MWh – Net (after estimated rebates from non-physical transactions):						
RS1 Charge/MWh: Purchasers @~ 68%	\$0.608	\$0.631	\$0.636	\$0.669	\$0.725	
RS1 Charge/MWh: Sellers @~26%	\$0.233	\$0.241	\$0.244	\$0.259	\$0.282	
RS1 Charge/MWh: Non-physical transactions @~6%	\$0.054	\$0.056	\$0.056	\$0.059	\$0.064	

Budget Highlights: Peer Comparison

(\$ in millions)					
	Revenue Requirement *			Other Information *	
ISO/RTO	2019 Revenue Req. (In \$)	Estimated 2019 MWh throughput (In millions of MWh)	2019 revenue req. (In \$/MWh)	Debt outstanding at 12/31/19	Authorized FTEs at 12/31/19
MISO	Not yet available				
PJM	Not yet available				
ERCOT	\$207.4M	373.7	\$0.555	\$51.0M	749
CAISO	\$195.0M	241.0	\$0.810	\$170.0M	643
ISO-NE	\$190.0M	143.8	\$1.320	\$99.5M	608
NYISO	\$168.2M	157.1	\$1.071	\$108.5M	594
*All amounts are DRAFT, and may be subject to change as each ISO/RTO completes its 2019 budget approval process					

Budget Highlights

While the NYISO has been successful in maintaining a virtually flat revenue requirement for the past four years (average increase of ~1% per year 2015 – 2018), this trend is not sustainable for the 2019 budget. Upward pressure is being placed on NYISO’s Revenue Requirement due to the following required spending level increases:

- Debt Service
 - Repayment of EMS/BMS System Upgrade project financing
- Professional Fees (Consultants)
 - Mix of 2019 proposed projects – Energy Storage Participation Model & Data Integration Phase IV
- Salaries & Benefits
 - 3.5% Proposed Merit/Promotion Adjustments
 - 15 Additional Positions
- Computer Services
 - Increasing inventory of software licenses
 - New hosted services
 - New IT infrastructure and software to support compliance requirements and security initiatives
 - Annual contract increases in vendor support costs

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Budget Highlights

However, NYISO continues to mitigate the impact of required spending level increases in 2019 by implementing cost reduction, avoidance and containment measures in the following Budget categories: (Refer to Details on Following Slides)

- Capital
- Salaries & Benefits
- Professional Fees
- External Legal Fees
- Computer Services
- Corporate Insurance
- Meetings & Training
- Debt Service Cost
- Debt Proceeds
- Miscellaneous Revenue

Budget Highlights

Spending Reduction/Avoidance/Containment Measures

■ **Capital** - In order to minimize increases in internal Capital requirements and provide sufficient funding for the mix of 2019 projects, the following actions have been taken:

➤ **Planned initiatives deferred to a future budget year:**

- Security – \$0.7M
 - New Security Gates and Security Fence at the Carman Road facility
- Corporate Continuity – \$0.7M
 - Convert old Data Center space at the Carman Road facility to office space
- Facilities – \$0.2M
 - Replace Guard House at Krey Blvd.
 - Reseal and Stripe Parking Lots and Drive Lanes at Carman Road

➤ **Planned initiatives accelerated into 2018:**

- Microsoft System Upgrade – \$0.5M

➤ **Elimination of hardware requirements by transitioning to Amazon Web Services:**

- Enterprise Information Management - Data Integration Phase IV - \$1.0M

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

- **Salaries & Benefits** - The 2019 increase of \$2.9M has been partially mitigated by the following actions:
 - Total authorized positions for 2019 are proposed to increase by 15 new positions. In order to mitigate the budget impact, the hiring of these positions will be prioritized and timed throughout the year rather than filling these positions in early 2019, resulting in an avoided increase of \$1.0M
 - Employee health insurance plan changes made in 2018 have resulted in savings, which are anticipated to continue in 2019, resulting in a reduction from the 2018 budget of \$0.4M
 - Due to the projected impact of interest rates, actuarial assumptions, level of benefit payments, and funded status; NYISO will have a 2019 funding requirement of \$0.8M. In order to avoid this incremental cost in 2019, this funding will be accelerated into 2018
 - NYISO's 2018 budgeted vacancy rate is 5%, however, actual experience has been approximately 3.5% through July 2018. Rather than reduce the vacancy rate for 2019, NYISO will continue to manage headcount, resulting in an avoided increase of \$1.0M

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

Professional Fees – The 2019 increase of \$5.1M is primarily driven by the following projects:

- Enterprise Information Management – Data Integration Phase IV project with budgeted consulting support of \$4.8M
- Energy Storage Resource Participation Model project with budgeted consulting support of \$4.3M

This increase has been partially mitigated by **spending reductions** in non-project consulting, totaling **\$1.2M** from the 2018 budget. (Refer to slide 35 for details)

Computer Services - The 2019 increase of \$1.6M has been partially mitigated by the following actions:

- **Cost reductions of \$0.4M** in negotiated contract savings to be realized in 2019 resulting from achievements in support of the 2018 Enterprise Cost Management corporate goal

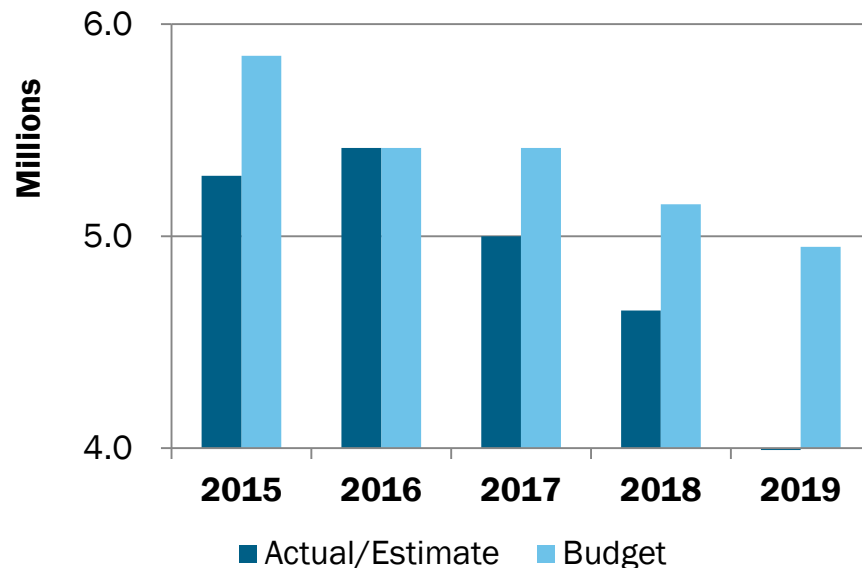
Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

External Legal Fees

- 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 reduce the 2019 budget by \$0.2M or ~4%
- The following chart provides historical trends from 2015 to 2019

Historical External Legal Fee Comparison



Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

■ Corporate Insurance

- Based upon historical negotiation outcomes, NYISO is proposing to hold the 2019 budget flat to 2018 at \$2.9M (Three consecutive years with no increase 2017 - 2019)

■ Meetings & Training

- NYISO's budget for business meetings is proposed to increase by \$0.1M, primarily due to hosting the 2019 IRC Conference (cost sharing agreement). In order to avoid any additional cost increase, the budget for other meetings, travel and employee training has been held flat to 2018 levels

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

- **Debt Service Cost**
 - In 2018, after consultation with Market Participants, NYISO utilized the funds remaining from the 2017 budget cycle, totaling **\$4.2M, to make early repayments on outstanding debt.** This action has reduced 2019 debt service costs (principal and interest) by a corresponding amount

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

■ Debt Service Cost (Cont.)

- 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. This action mitigates the risk to NYISO's budget of future interest rate increases through the year 2021
- 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. This action mitigates the risk to NYISO's budget of future interest rate increases through the year 2021

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

■ Debt Service Cost (Cont.)

Effective January 1, 2019, NYISO has negotiated a new five year budget facility loan to fund the cost of implementing Projects, technology enhancements and facility improvements.

- Interest Spread – The proposed budget facility includes a variable rate of LIBOR plus 67.5 basis points, which is 27.5 basis points lower than the prior five year budget facility
- Debt Issuance costs – The proposed budget facility reduces debt issuance costs by \$0.3M from the prior budget facility

Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

■ Debt Proceeds

- In order to mitigate the annual cost impact on RS1 of the EMS/BMS System Upgrade project, NYISO negotiated a new \$30M budget facility to fund this strategic initiative for the years 2016 through 2018
- Effective January 1, 2019, NYISO has negotiated a one year extension of the EMS/BMS loan to December 31, 2019. This extension provides funding for 2019 project costs of \$3.3M
- Absent a term extension and financing mechanism for this project, the full cost for 2019 would have been included in NYISO's annual revenue requirement and charged to Market Participants via RS1

Refer to slides 41 and 42 for additional details

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Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

■ Debt Proceeds (Cont.)

- Debt Proceeds used to fund the cost of implementing Projects, technology enhancements and facility improvements have been increased from an annual average of \$25M to \$30M in 2019
- The 2019 Project budget, excluding the EMS/BMS Project, is approximately \$29M, which is \$5M higher than the 2018 Project budget and \$6.5M higher than the average of 2015 – 2018 Project budgets
- The structure of the new five year budget facility provides for increased flexibility to adjust borrowings based on fluctuations in funding requirements
- Absent the ability to increase Debt Proceeds, certain Projects may have been eliminated, reduced in scope and/or charged directly to Rate Schedule 1 in 2019

Refer to slides 41 and 42 for additional details

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Budget Highlights

Spending Reduction/Avoidance/Containment Measures (Cont.)

▪ Miscellaneous Revenue

- Miscellaneous revenue from reimbursable planning studies is increasing by \$1.0M due to the addition of two positions in support of Interconnection and Facilities studies and an additional increase based on historical budget vs. actual experience
- Interest income is projected to increase by \$0.2M in 2019 due to the expectation of continued interest rate increases

Summary of Revenue Requirement Changes

2019 Rate Schedule 1 Revenue Requirement	\$168.2
2018 Rate Schedule 1 Revenue Requirement	<u>\$155.7</u>
Increase in Rate Schedule 1 Revenue Requirement	\$12.5
Spending Reductions/Containment	
Capital	(3.4)
Miscellaneous Revenue	(1.2)
External Legal Fees	(0.2)
Insurance	(-)
Telecommunications	(-)
Other (BOD & NPCC Fees)	<u>(-)</u>
	(\$4.8)
Budget Increases	
Debt Service* (Includes Interest)	6.4**
Professional Fees (Consultants)	5.1
Salaries and Benefits	2.9
Computer Services	1.6
Reduction in Debt Proceeds*	0.9**
Building Services	0.3
Meetings & Training	<u>0.1</u>
	\$17.3

*Primarily driven by the EMS/BMS System Upgrade project

**Totals \$7.3M or 42% of Budget Increases

2019 Budget Overview

(\$ in millions, except RS#1/MWh)	2019 Draft 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

2018 Budget Overview

(\$ in millions, except RS#1/MWh)	2018 Budget		
	Enterprise	Projects	Total
Capital	\$2.0	\$8.2	\$10.2
Salaries & Benefits	76.3	15.5	91.8
Professional Fees (including Legal)	18.2	8.4	26.6
Building Services	6.4	-	6.4
Computer Services	16.4	-	16.4
Insurance	2.9	-	2.9
Telecommunications	2.9	-	2.9
Other Expenses (BOD, Travel/Training, NPCC Fees)	<u>4.0</u>	-	<u>4.0</u>
Subtotal: Current Year Needs	\$129.1	\$32.1	\$161.2
Debt Service	32.0	-	32.0
Subtotal: Cash Budget	\$161.1	\$32.1	\$193.2
Less: Miscellaneous Revenues	(3.7)	-	(3.7)
Less: Proceeds from Current Year Budget Debt	(2.1)	(32.1)	(34.2)
Add: Interest on Current Year Budget Debt	<u>0.3</u>	<u>0.1</u>	<u>0.4</u>
Total: Rate Schedule #1 Revenue Requirement (in \$\$)	\$155.6	\$0.1	\$155.7
Budgeted MWh (in millions)			157.8
Rate Schedule #1 Revenue Requirement in \$/MWh (budget)			\$0.987

NYISO 2019 Budget: Detailed Line Item Information

Line Item Details - Capital

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Facility Improvements	\$1.5	\$0.9	\$0.6
Replacement of Existing Hardware	4.9	6.6	(1.7)
Software & Software Licenses (capitalized)	0.4	2.7	(2.3)
Total Capital Costs	\$6.8	\$10.2	(\$3.4)

Facility Improvements:

Facility improvements included within the 2019 budget include \$0.6M to replace 23 year old cooling towers at Krey Blvd., \$0.3M to reconfigure consoles at the Carman Rd. control room, \$0.1M for Phase 1 of Carman Rd. Business Continuity Readiness, \$0.1M for design work to replace two UPS systems (13/18 years old) serving critical load at Krey Blvd. and \$0.4M for various minor facilities improvements.

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 2019 budget includes \$4.0M in new hardware required for proposed projects including, \$3.2M for Network Infrastructure Upgrade, \$0.3M for Enterprise Information Management – Data Integration Phase IV, \$0.3M for the Microsoft Upgrade and \$0.2M for Identity & Access Management. The 2019 budget includes \$0.4M of new hardware required to support various Security Program enhancements and \$0.4M for storage expansion.

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 2019 budget includes \$0.2M in new software required for the Microsoft System Upgrade and \$0.2M for storage expansion – backup software.

Line Item Details - Salaries & Benefits

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Base Salaries	\$65.7	\$63.3	\$2.4
Benefit Programs / At-Risk Compensation	23.7	23.4	0.3
Payroll Taxes	<u>5.3</u>	<u>5.1</u>	<u>0.2</u>
Total Salaries & Benefits	\$94.7	\$91.8	\$2.9

The ~3.1% increase in Salaries & Benefits is primarily driven by:

- \$2.6M reflecting an average 3.0% merit and 0.5% promotion adjustment budget for NYISO employee compensation and 15 additional positions in 2019
- \$0.3M reflecting benefits for 15 additional positions and 401k contributions on 2019 base salaries, partially offset by a decrease of \$0.4M in projected health insurance claim costs based on 2018 YTD experience

See additional details on Salaries & Benefits on the following slides

Line Item Details - Salaries & Benefits (Cont.)

Headcount Summary		
Total Authorized FTE Positions for 2018	579	
Add: New Positions for 2019	<u>15</u>	There are 15 proposed incremental authorized positions in 2019 (see details on next slides)
Total Authorized FTE Positions for 2019	594	
Less: Assumed Vacancies	<u>30</u>	Based on assumed vacancy rate of 5%
Equals: Total Budgeted FTE Positions	564	

Headcount Summary By Year			
	2019	2018	Change
Total Authorized FTE Positions	594	579	15
Less: Assumed Vacancies	(30)	(29)	(1)
Total Budgeted FTE Positions	564	550	14

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Line Item Details - Salaries & Benefits (Cont.)

Department	New for 2019	Key Contributions from Positions
Information Technology	5	<p>Security Analysts – Five incremental positions will enable 24x7 staffing of the Cyber Security Operations Center (CSOC), which is required to implement broader plans, procedures, and technologies to detect, identify, analyze, and respond to escalating cybersecurity threats to the electricity sector.</p>
System & Resource Planning	3	<p>Reliability Planning Engineer - This position is required to ensure that the Resource Planning group can support the additional responsibilities created by expanding NERC compliance requirements.</p> <p>Interconnection Studies Engineer & Facility Studies Engineer – These positions are required to support the increasing number of new interconnection requests, facility studies and limited operations studies for large and small generation projects and transmission interconnection projects. These positions are partially self funded with an increase in reimbursable planning study revenue.</p>

Line Item Details - Salaries & Benefits (Cont.)

Department	New for 2019	Key Contributions from Positions
Market Operations	2	<p>Resource Adequacy Operations Analyst – This position is required to support a department that is chronically resource constrained to support development of the Installed Reserve Margin (IRM) and Locational Capacity Requirements (LCRs) each year. The introduction of the LCR optimizer necessitates the need for new procedures as well as additional study cases to be performed in parallel with those historically performed on behalf of the NYSRC. Sufficient resourcing is needed to ensure sufficient transparency into this new process.</p> <p>Resource Adequacy Operations Engineer - This position is required to support a department that is chronically resource constrained to support development of the Installed Reserve Margin (IRM) and Locational Capacity Requirements (LCRs) each year. Specifically, it is necessary to have additional engineering support to evaluate and improve the resource adequacy models. This position is required to further the evolution of the resource adequacy model to remain aligned with on-going system and market changes.</p>
Operations	2	<p>Energy Market Engineer – This position is required so as to have a fully dedicated resource to work with existing market operations commitment analysis, scheduling and power systems engineering functions to facilitate the timely assessment, development and testing of new tools. This position is critical for accelerating the development and integration of new technologies and for advancing the life-cycles of existing NYISO technologies.</p> <p>Power Systems Application Engineer – This position is required in order to address increasing responsibilities in recent years, such as, support of the PMU data and applications; Control Center Video Wall; NPCC map board; Wind and Solar; SCADA Energy Management System and advanced applications such Real Time Calculation, Voltage Stability Assessment, Voltage Stability Monitor, Dispatcher Power Flow, State Estimator, Security Analysis, Security Monitor and Seasonal and Dynamic ratings; DMNC data; PI tags update verification and all the station one-line diagrams.</p>

Line Item Details - Salaries & Benefits (Cont.)

Department	New for 2019	Key Contributions from Positions
Market Design	1	Market Design Specialist – This position is required to support increased work load due to expanding internal and external stakeholder expectations to complete more thorough analysis and scenario investigations of new market design proposals to provide increased transparency, setting expectation of potential impact of proposed changes and to quantify the financial impacts on all parties, as well as supporting ever expanding industry driven DER efforts driven by changes to utility regulations and state policies.
Finance	1	Procurement Analyst – This position is required in order to support NYISO’s Supply Chain Cyber Security Risk Program and CIP-13, which requires the inclusion of certain security provisions in vendor contracts. This will require new coordination internally and with vendors to amend contracts with new provisions and negotiate these provisions for new contracts and/or vendors.
External Affairs	1	Stakeholder Services Representative – This position is required in order to maintain rapid response times to customer inquiries as the number and complexity of inquiries increases and new customers are added. In addition, this position will support the increased level of participation required from internal departments and externally facing projects.
Total Impact on Budgeted Positions	15	

Line Item Details - Salaries & Benefits (cont.)

■ Merit & Promotion Adjustment

- NYISO's 2019 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 3.2%
 - Among our ISO peers, the planned budget for compensation adjustments in 2019 ranges between 3.0% - 3.5% (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 (low unemployment rate of 3.9%² as of July 2018)
 - Costs (direct and indirect) of employee turnover can be significant

1 – WorldatWork, The Conference Board, ERI Economic Research Institute and Korn Ferry Hay Group

2 – Bureau of Labor Statistics (BLS)

Line Item Details - Professional Fees

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Product Enhancement consultants (<i>several vendors</i>)	\$14.4	\$8.4	\$6.0
External legal fees	\$5.0	\$5.2	(\$0.2)
Market Monitoring	\$4.3	\$4.1	\$0.2
Misc. Professional Fees (all individually < \$250K)	\$1.3	\$1.7	(\$0.4)
Security guards	\$1.7	\$1.7	-
Reliability & Economic Planning	\$0.6	\$1.0	(\$0.4)
Information Technology & Facilities	\$0.6	\$0.9	(\$0.3)
Market design & related consulting	\$0.5	\$0.7	(\$0.2)
Ranger support & enhancements	\$1.1	\$1.0	\$0.1
Employee Benefits & Recruiting	\$1.2	\$1.2	-
External audits and Internal Audit co-sourcing	\$0.7	\$0.7	-
Total Professional Fees	\$31.4	\$26.6	\$4.8

Product Enhancement Consultants: The expected increase is primarily driven by the Enterprise Information Management – Data Integration Phase IV project with budgeted consulting support of \$4.8M and the Energy Storage Resource Participation Model project totaling \$4.3M of consultancy. (See additional details on 2019 proposed product enhancements in a separate presentation posted for the 8/17/2018 BPWG meeting).

Line Item Details - Building Services

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Building Services	\$6.7	\$6.4	\$0.3

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

The 2019 budget is proposed to increase by \$0.3M, primarily driven by increases in General Building Services, which includes Roads & Grounds, General Repairs & Maintenance, Utilities and Building Service Contracts.

Line Item Details - Computer Services

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Computer Services Costs	\$18.0	\$16.4	\$1.6

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:

- \$1.2M increase in software maintenance primarily due new software agreements and expected maintenance cost increases in existing agreements
- \$0.2M increase in hardware maintenance primarily due to new additions and the end of warranty periods
- \$0.2M increase in non-capitalized hardware required to replace end of life (EOL) equipment

Line Item Details - Insurance

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Insurance	\$2.9	\$2.9	\$ -

Based on the continued success of policy renewal negotiations and close monitoring, NYISO is proposing to hold flat its 2019 budget for insurance premiums for the third consecutive year (2017 – 2019).

Line Item Details - Telecommunications

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Telecommunications	\$3.0	\$2.9	\$0.1

Telecommunications cost is expected to increase by \$0.1M due to circuits to support additional Substation/Generator sites and user segmentation of internet circuits.

Line Item Details - Other Expenses

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Travel, Meetings, Training Costs	\$2.3	\$2.2	\$0.1
BOD Fees and Expenses	\$1.5	\$1.5	\$ -
NPCC Fees	<u>\$0.3</u>	<u>\$0.3</u>	<u>\$ -</u>
Total Other Expenses	\$4.1	\$4.0	\$0.1

NYISO's travel and training budget is expected to increase by \$0.1M primarily due to hosting the 2019 IRC Conference, which will be a cost sharing agreement with the other ISO/RTOs.

Line Item Details - Debt Service

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

Debt Facility & Repayment Period	Borrowings	2015	2016	2017	2018	2019	2020	2021	2022	2023
2005 KCC Bldg Mortgage & Renov. (20 yrs)	\$24.8M	\$2.1	\$2.1	\$2.1	\$2.1	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0
Infrastructure Master Plan Mortgage (19 yrs)	\$45.0M	\$4.5	\$4.4	\$4.3	\$4.2	\$4.1	\$4.0	\$3.9	\$3.8	\$3.6
2012 Budget Loan (3 yrs)	\$25.8M	\$3.0	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2013 Budget Loan (3 yrs)	\$24.2M	\$13.5	\$3.0	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2014 Budget Loan (3 yrs)	\$25.0M	\$8.1	\$16.7	\$0.6	\$-	\$-	\$-	\$-	\$-	\$-
2015 Budget Loan (3 yrs)	\$25.0M	\$0.3	\$8.8	\$15.9	\$1.0	\$-	\$-	\$-	\$-	\$-
2016 Budget Loan (3 yrs)	\$25.0M	\$-	\$0.3	\$8.9	\$12.9	\$4.3	\$-	\$-	\$-	\$-
2017 Budget Loan (3 yrs)	\$24.7M	\$-	\$-	\$0.4	\$9.0	\$8.7	\$8.4	\$-	\$-	\$-
2018 Budget Loan (3 yrs)	\$25.3M Est.	\$-	\$-	\$-	\$0.3	\$9.0	\$8.7	\$8.6	\$-	\$-
2016-2019 EMS/BMS System Upgrade	\$30.0M Est.	\$-	\$-	\$2.4	\$6.1	\$9.5	\$8.2	\$4.5	\$1.1	\$-
2019 Budget Loan (3 yrs est.)	\$30M Est.	\$-	\$-	\$-	\$-	\$0.5	\$10.9	\$10.5	\$10.2	\$-
2020 Budget Loan (3 yrs est.)	\$28M Est.	\$-	\$-	\$-	\$-	\$-	\$0.5	\$10.2	\$9.8	\$9.5
2021 Budget Loan (3 yrs est.)	\$28M Est.	\$-	\$-	\$-	\$-	\$-	\$-	\$0.5	\$10.2	\$9.8
2022 Budget Loan (3 yrs est.)	\$27M Est.	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$0.5	\$9.8
Bank Fees	n/a	\$0.5	\$0.5	\$0.4	\$0.4	\$0.7	\$0.7	\$0.7	\$0.6	\$0.6
Total Debt Service Payments		\$32.0	\$35.8	\$35.0	\$36.0	\$38.8	**	**	**	**

Note: Totals after 2019 are not presented as additional budget loans after 2019 are not factored into this table.

Approximately \$27M - \$30M is expected to be borrowed on average each year during 2019 - 2022, representing the annual cost of implementing Projects, technology enhancements, and facility improvements.

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Line Item Details - Debt Service (Cont.)

Principal Balance Outstanding at December 31 (\$ in millions)									
Debt Facility	2015	2016	2017	2018	2019	2020	2021	2022	2023
2005 KCC Bldg Mortgage & Renov.	\$15.6	\$14.4	\$13.2	\$11.9	\$10.6	\$9.1	\$7.6	\$5.9	\$4.2
Infrastructure Master Plan Mortgage	\$41.2	\$38.6	\$35.9	\$33.3	\$30.7	\$28.0	\$25.4	\$22.7	\$20.0
2015 Budget Loan	\$ 25.0	\$16.7	\$1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016 Budget Loan	\$-	\$25.0	\$16.7	\$4.2	\$ -	\$ -	\$ -	\$ -	\$ -
2017 Budget Loan	\$ -	\$ -	\$24.7	\$16.5	\$8.3	\$ -	\$ -	\$ -	\$ -
2018 Budget Loan	\$ -	\$ -	\$ -	\$25.3	\$16.5	\$8.3	\$ -	\$ -	\$ -
2016-2019 EMS/BMS System Upgrade	\$ -	\$6.7	\$14.6	\$18.0	\$12.4	\$4.6	\$0.2	\$ -	\$ -
2019 Budget Loan	\$ -	\$ -	\$ -	\$ -	\$30.0	\$20.0	\$10.0	\$ -	\$ -
2020 Budget Loan	\$ -	\$ -	\$ -	\$ -	\$ -	\$28.0	\$18.7	\$9.3	\$ -
2021 Budget Loan	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$28.0	\$18.7	\$9.3
2022 Budget Loan	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$27.0	\$ -
Total Principal Outstanding	\$81.8	\$101.4	\$106.1	\$109.2	\$108.5	**	**	**	**

**** Note: Totals after 2019 are not presented as additional Budget Loans after 2019 are not factored into this table.**

Line Item Details - Misc. Revenue

(\$ in millions)	2019 Draft	2018 Budget	\$ Change
Total Miscellaneous Revenues	\$4.9	\$3.7	(\$1.2)

Miscellaneous Revenue from reimbursable planning studies is increasing by \$1.0M due to the addition of two positions in support of Interconnection and Facilities Studies and an additional increase based on historical experience.

Interest income is projected to increase by \$0.2M in 2019 due to projected rise in interest rates.

2020 - 2023 Draft Budget: Projections

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Rate Schedule 1 Summary

(\$ in millions, except RS#1/MWh)	Budget Drafts				
	2019 Draft	2020 Projection	2021 Projection	2022 Projection	2023 Projection
Total: Rate Schedule #1 Revenue Requirement (in \$\$)	\$168.2	\$175.1	\$179.5	\$181.9	\$184.7
Budgeted MWh (in millions)	157.1	156.0	155.1	154.4	154.1
Rate Schedule #1 Revenue Requirement in (\$/MWh)	\$1.071	\$1.122	\$1.157	\$1.178	\$1.199

The 2020-2023 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				
	2019 Draft	2020 Projection	2021 Projection	2022 Projection	2023 Projection
Capital	\$6.8	\$6.5	\$7.0	\$7.0	\$6.0
Salaries & Benefits	94.7	98.5	102.8	107.3	112.1
Professional Fees (including Legal)	31.4	25.1	25.4	25.8	26.3
Building Services	6.7	6.8	6.9	7.0	7.1
Computer Services	18.0	17.6	19.5	18.7	19.1
Insurance	2.9	3.0	3.1	3.1	3.2
Telecommunications	3.0	3.0	3.2	3.2	3.3
Other Expenses (BOD, Travel/Training, NPCC Fees)	<u>4.1</u>	<u>4.1</u>	<u>4.2</u>	<u>4.3</u>	<u>4.3</u>
Subtotal: Current Year Needs	\$167.6	\$164.6	\$172.1	\$176.4	\$181.4
Debt Service	<u>38.2</u>	<u>43.2</u>	<u>40.3</u>	<u>37.5</u>	<u>35.4</u>
Subtotal: Cash Budget	\$205.8	\$207.8	\$212.4	\$213.9	\$216.8
Less: Miscellaneous Revenues	(4.9)	(5.2)	(5.4)	(5.5)	(5.6)
Less: Proceeds from Current Year Budget Debt	(33.3)	(28.0)	(28.0)	(27.0)	(27.0)
Add: Interest on Current Year Budget Debt	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Total: Rate Schedule #1 Revenue Requirement in \$\$	\$168.2	\$175.1	\$179.5	\$181.9	\$184.7
Budgeted MWh (in millions)	157.1	156.0	155.1	154.4	154.1
Rate Schedule #1 Revenue Requirement in \$/MWh (budget)	\$1.071	\$1.122	\$1.157	\$1.178	\$1.199

Major Assumptions

Cost Category	Major Assumptions for 2019 and 2020 - 2023
Capital	<ul style="list-style-type: none"> Purchases of Hardware and Software are estimated as follows: 2019 = \$5.3M 2020 = \$3.3M 2021 = \$3.1M 2022 = \$2.8M 2023 = \$3.3M Facility Improvements are estimated as follows: 2019 = \$1.5M 2020 = \$3.2M 2021 = \$3.9M 2022 = \$4.2M 2023 = \$2.7M
Salaries & Benefits	<ul style="list-style-type: none"> Total budgeted headcount as follows: 594 FTEs for 2019, 600 FTEs for 2020, 606 FTEs for 2021, 613 FTEs for 2022 and 620 for 2023 Estimated vacancy factor is 5% in 2019 - 2023 Average annual salary increase of 3% and annual promotion adjustment increase of 0.5% in 2019 - 2023 Assumes no insurance premium increases in 2019, 5% annual increase in insurance costs and \$0.5M pension plan funding in 2020 – 2023
Professional Fees (including Legal)	<ul style="list-style-type: none"> Assumes an increase of \$4.8M in 2019 primarily driven by the Enterprise Information Management – Data Integration Phase IV project with budgeted consulting support of \$4.8M and the Energy Storage Resource Participation Model project totaling \$4.3M of consultancy Assumes a decrease of \$6.3M in 2020 primarily driven by the completion of the Enterprise Information Management – Data Integration Phase IV project and the Energy Storage Resource Participation Model project Assumes minor increases in Professional Fees from 2020 as follows: 2021 = \$25.4M 2022 = 25.8M 2023 = \$26.3M
Building Services	<ul style="list-style-type: none"> Assumes a \$0.3M increase in Building Services in 2019 and assumes \$0.1M inflationary increase each year 2020 - 2023
Computer Services	<ul style="list-style-type: none"> Assumes an increase of \$1.6M in 2019 primarily due to new software agreements and expected maintenance cost increases in existing agreements Assumes a decrease of \$0.4M in 2020 due to the elimination of overlapping hardware maintenance costs following the EMS/BMS Upgrade project deployment Assumes an increase of \$1.9M in 2021 primarily due to transition period technical support for the Datamart Assumes a decrease of \$0.8M in 2022 primarily due to the elimination of transition period technical support for the Datamart Assumes an increase of \$0.4M in 2023 primarily due to new software agreements and expected maintenance cost increases in existing agreements
Insurance	<ul style="list-style-type: none"> Assumes no increase in 2019 and assumes Insurance costs ranging from \$3.0M in 2020 to \$3.2M in 2023
Telecommunications	<ul style="list-style-type: none"> Assumes an increase of \$0.1M in 2019 and assumes Telecommunication service costs ranging from \$3.0M in 2020 to \$3.3M in 2023
Other Expenses	<ul style="list-style-type: none"> Assumes an increase of \$0.1M in 2019 and assumes Other Expenses ranging from \$4.1M in 2020 to \$4.3M in 2023
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 \$33.3M for 2019, \$28.0M for 2020, \$28.0M for 2021, \$27.0M for 2022 and \$27.0M for 2023 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

2020 Budget Summary

■ In Summary

- NYISO's draft 2020 advisory budget totals \$175.1M, allocated across a forecast of 156.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.122. Comparatively, the 2019 draft budget totals \$168.2M, allocated across a forecast of 157.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.071
- NYISO's draft 2020 advisory budget represents a **4.1% increase in Revenue Requirement** from the 2019 draft budget and a 0.70% decrease in projected MWh for an overall Rate Schedule 1 increase of 4.8%

■ Primary Drivers

- The primary drivers of a \$6.9M increase in the RS1 Revenue Requirement from 2019 to 2020 are as follows:
 - \$5.3M reduction in proceeds from debt primarily due to completion of the EMS/BMS project in 2019 and anticipated funding requirements for 2020 proposed projects
 - \$5.0M increase in debt service cost - In 2019 debt service was reduced by \$4.2M as NYISO utilized the funds remaining from the 2017 budget cycle to make additional principal payments on the 2016 budget facility. No reductions for early repayments on debt from potential savings on annual budget or RS1 overcollections have been included in advisory budgets
 - \$3.8M 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
 - \$6.3M decrease in Professional Fees primarily due to anticipated consulting requirements for 2020 proposed projects
 - \$0.4M decrease in Computer Services primarily due to the elimination of overlapping hardware maintenance costs following the EMS/BMS project deployment

2021 Budget Summary

■ In Summary

- NYISO’s draft 2021 advisory budget totals \$179.5M, allocated across a forecast of 155.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.157. Comparatively, the draft 2020 advisory budget totals \$175.1M, allocated across a forecast of 156.0 million MWh, for a Rate Schedule 1 charge/MWh of \$1.122
- NYISO’s draft 2021 advisory budget represents a **2.5% increase in Revenue Requirement** from the 2020 draft advisory budget and a 0.6% decrease in projected MWh for an overall Rate Schedule 1 increase of 3.1%

■ Primary Drivers

- The primary drivers of a \$4.4M increase in the RS1 Revenue Requirement from 2020 to 2021 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
 - \$1.9M increase in Computer Services primarily due to transition period technical support for the Datamart
 - \$0.5M increase in Capital primarily driven by Control Room renovations at the Carman Road facility
 - \$2.9M decrease in Debt Service primarily due to reduced payments on the EMS/BMS project loan

2022 Budget Summary

■ In Summary

- NYISO's draft 2022 advisory budget totals \$181.9M, allocated across a forecast of 154.4 million MWh, for a Rate Schedule 1 charge/MWh of \$1.178. Comparatively, the draft 2021 advisory budget totals \$179.5M, allocated across a forecast of 155.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.157
- NYISO's draft 2022 advisory budget represents a **1.3% increase in Revenue Requirement** from the 2021 draft advisory budget and a 0.5% decrease in projected MWh for an overall Rate Schedule 1 increase of 1.8%

■ Primary Drivers

- The primary drivers of a \$2.4M increase in the RS1 Revenue Requirement from 2021 to 2022 are as follows:
 - \$4.5M 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
 - \$1.0M reduction in proceeds from debt primarily due to anticipated funding requirements for 2022 proposed projects
 - \$0.4M increase in Professional Fees primarily due to expected cost increases in new and existing agreements
 - \$2.8M decrease in Debt Service primarily due to the final year of EMS/BMS project loan repayments in 2022
 - \$0.8M decrease in Computer Services primarily due to the elimination of transition period technical support for the Datamart

2023 Budget Summary

■ In Summary

- NYISO's draft 2023 advisory budget totals \$184.7M, allocated across a forecast of 154.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.199. Comparatively, the draft 2022 advisory budget totals \$181.9M, allocated across a forecast of 154.4 million MWh, for a Rate Schedule 1 charge/MWh of \$1.178
- NYISO's draft 2023 advisory budget represents a **1.5% increase in Revenue Requirement** from the 2022 draft advisory budget and a 0.2% decrease in projected MWh for an overall Rate Schedule 1 increase of 1.7%

■ Primary Drivers

- The primary drivers of a \$2.8M increase in the RS1 revenue requirement from 2022 to 2023 are as follows:
 - \$4.8M 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
 - \$0.4M increase in Computer Services primarily due to new software agreements and expected maintenance cost increases in existing agreements
 - \$2.1M decrease in Debt Service primarily due to completion of the EMS/BMS project loan repayments in 2022
 - \$1.0M decrease in Capital primarily due to completion of Control Room renovations at the Carman Road facility

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 benefits 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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