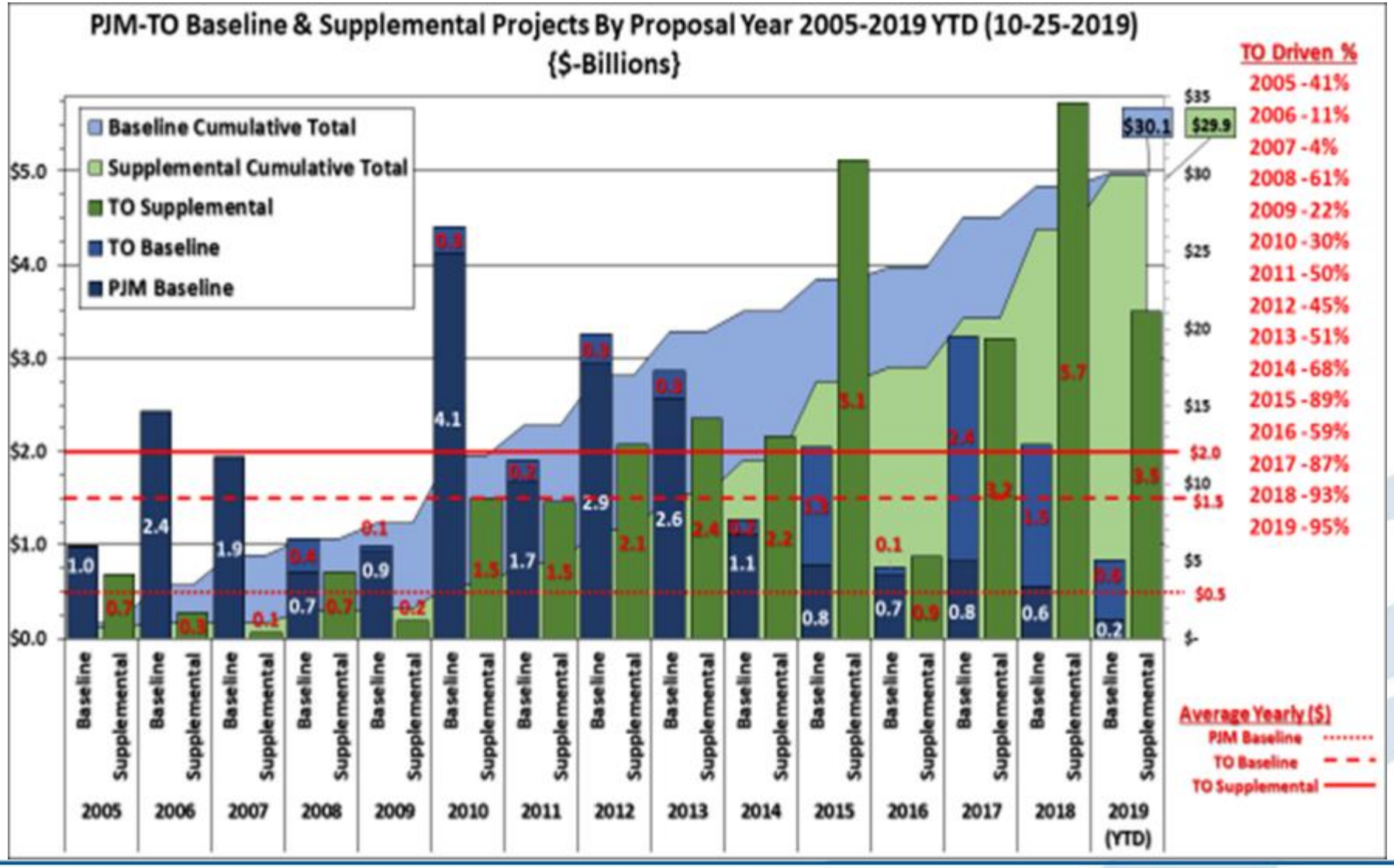
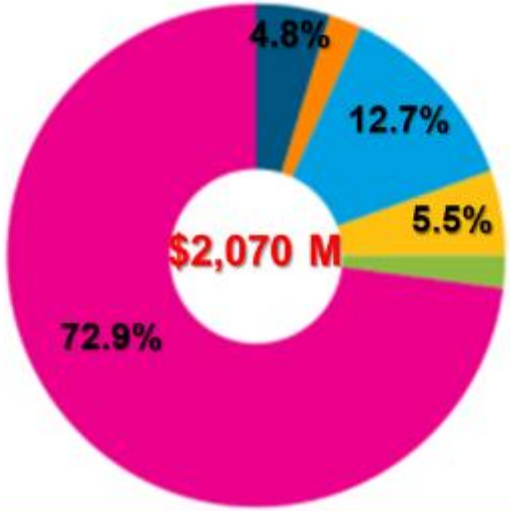
Majority of Projects Driven by TO Needs



New Projects in 2018
Project Drivers

Estimated Cost of Baseline Projects Approved by PJM Board

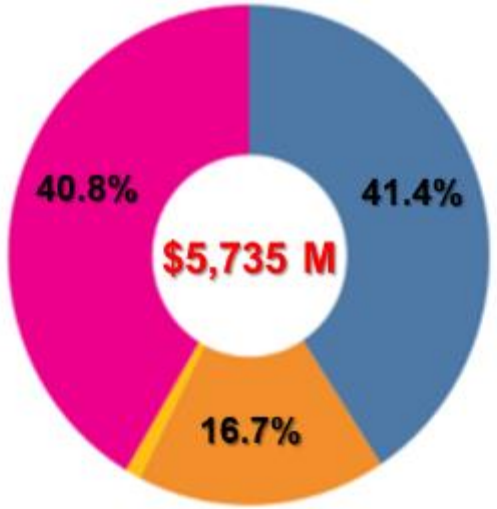


- PJM's Baseline Projects 7.2%
- TO's Baseline Projects 19.3%
- TO's Supplemental Projects 73.5%

2018 Set a New PJM Record for the Highest Amount of Proposed Transmission Investment
$7,805 M

Baseline Load Growth Deliverability & Reliability	$99
Congestion Relief - Economic	$44
Generator Deactivation	$261
Operational Performance	$113
Short Circuit	$44
TO Criteria Violation	$1,509

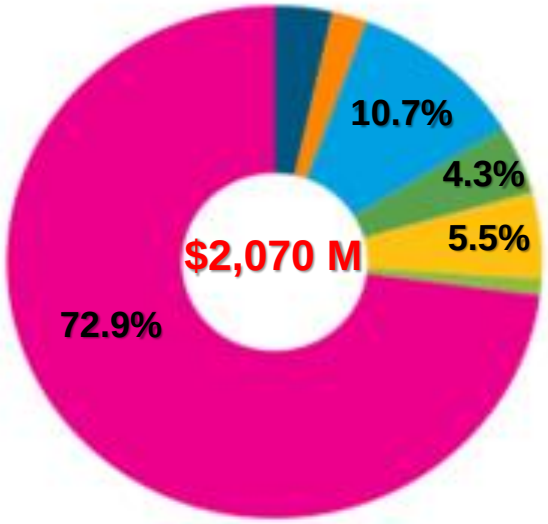
Estimated Cost of Supplemental Projects Presented by TOs to the TEAC



Equipment Material Condition, Performance and Risk	$2,338
Operational Flexibility and Efficiency	$960
Customer Service	$60
Multiple Drivers	$2,377

New Projects in 2018 Baseline Project Drivers

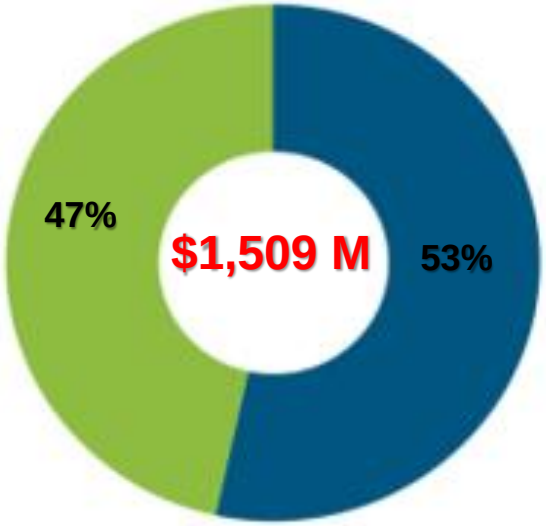
Estimated Cost of Baseline Projects Approved by PJM Board



Baseline Load Growth Deliverability & Reliability	$99
Congestion Relief - Economic	$44
Generator Deactivation	$261
Operational Performance	$113
Short Circuit	$44
TO Criteria Violation	$1,509

- **53% of TO "Criteria Violation" Baseline Projects were associated with End-of-Life Drivers**
- **39% of all Baseline Projects**

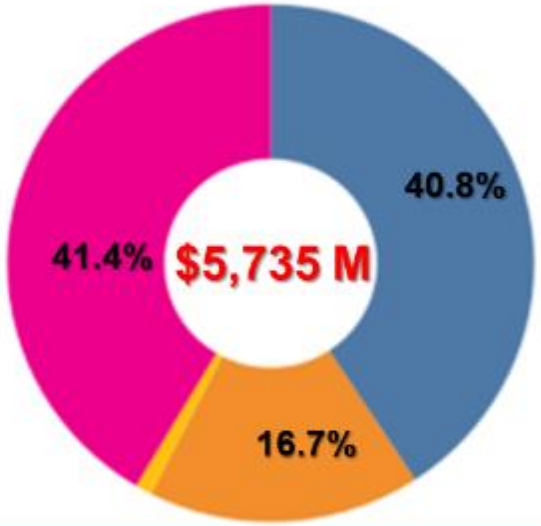
Estimated Cost of Baselines Projects Driven by TO Criteria Violations



Aging Infrastructure	$807
Other TO Criteria	$702

New Projects in 2018 Supplemental Project Drivers

Estimated Cost of Supplemental Projects Presented by TOs to the TEAC

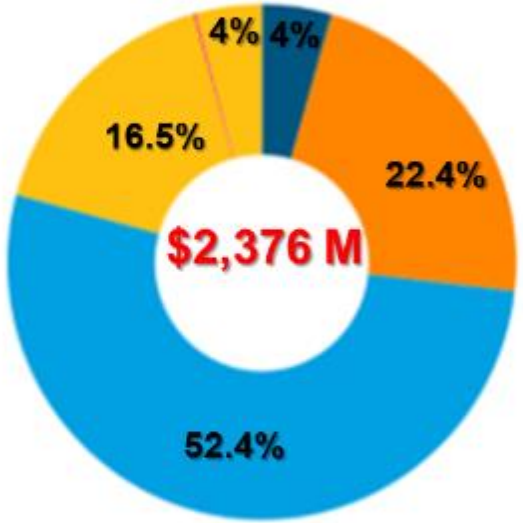


- 80.4% of 2018 TO Proposed Supplemental Projects were associated with End-of-Life Drivers

$ 4.61 B

Increase of 242% Compared to 2017

Estimated Cost of Supplemental Projects with Multiple Drivers

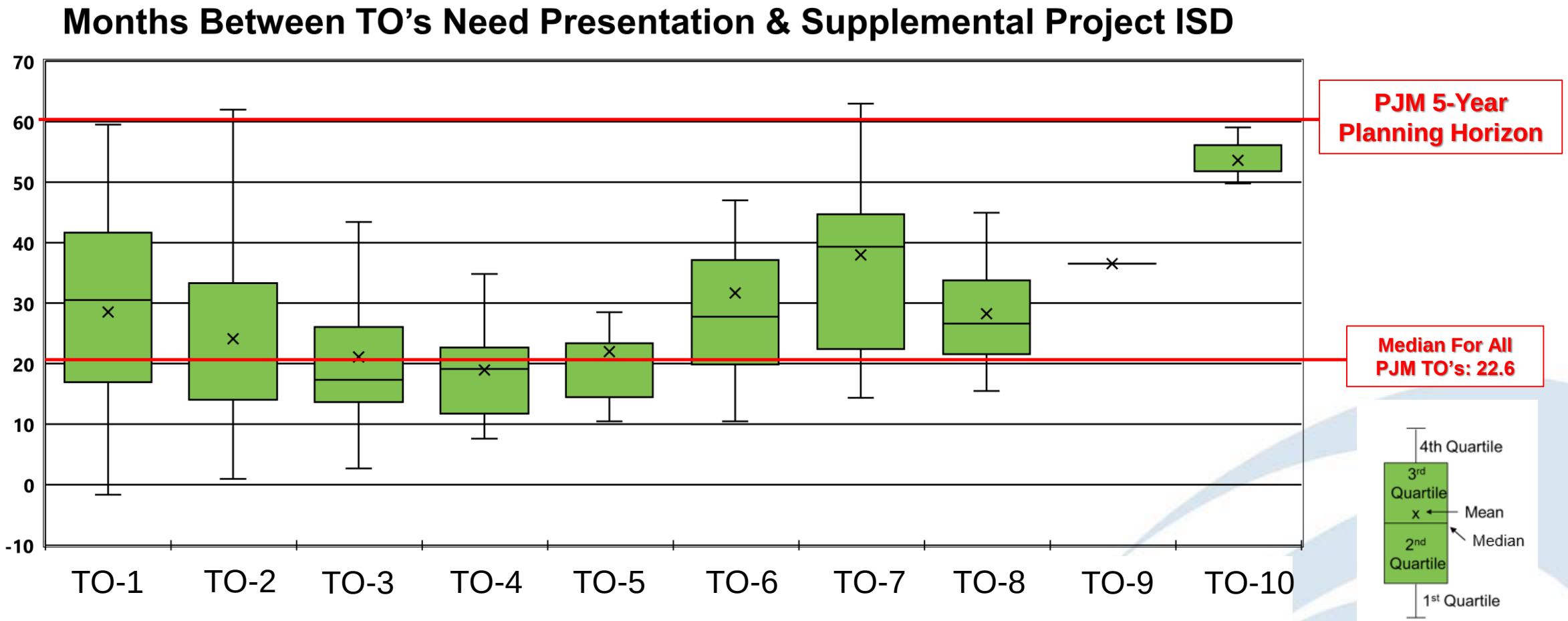


Equipment Material Condition, Performance and Risk	$2,338
Operational Flexibility and Efficiency	$960
Customer Service	$60
Multiple Drivers	$2,377

Equipment Material Condition, Performance and Risk / Customer Service	$105
Equipment Material Condition, Performance and Risk / Infrastructure Resilience	$532
Equipment Material Condition, Performance and Risk / Infrastructure Resilience / Customer Service	$0
Equipment Material Condition, Performance and Risk / Operational Flexibility and Efficiency	$1,246
Equipment Material Condition, Performance and Risk / Operational Flexibility and Efficiency / Custo..	$391
Equipment Material Condition, Performance and Risk / Operational Flexibility and Efficiency / Infrast	$1
Operational Flexibility and Efficiency / Customer Service	$99

Since M3 Implementation

PJM's TO's No Longer Develop Long-Term Plans
Most are 2-Year Planning on 2-Year Budgets

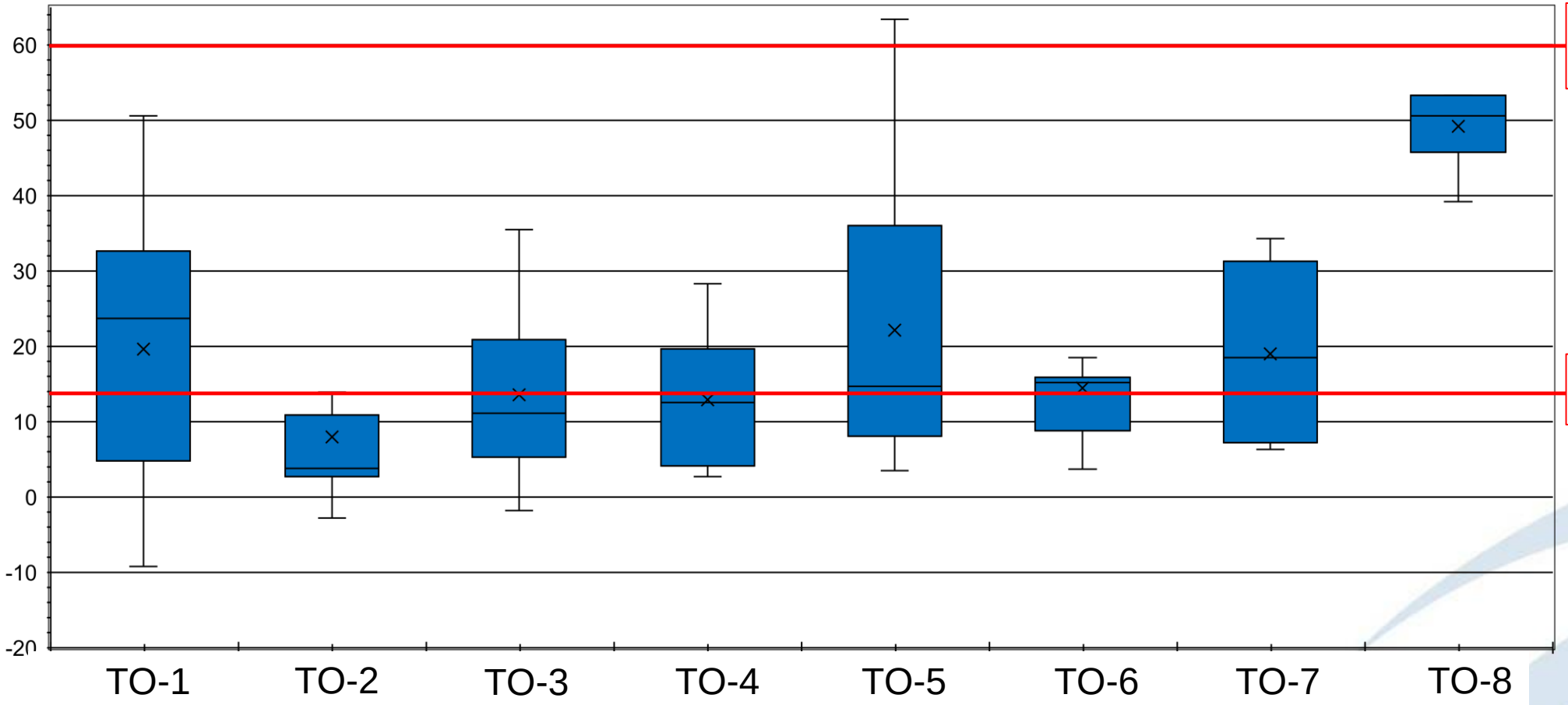


- Nearly all Supplemental Needs and Solutions are being identified and developed in shorter periods than PJM 5 year planning horizon
- The shorten planning periods associated with TO's Supplemental planning horizon can have a broad range of impacts including:
  - PJM's FERC 1000 competitive planning windows, generation interconnections, and BRA auctions

Since M3 Implementation

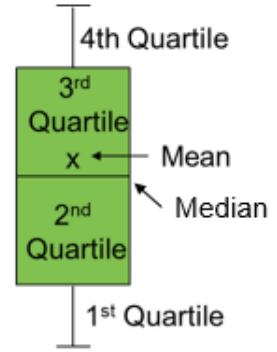
M3 Inhibits PJM from maintaining accurate models

Time Between Local Plan Submission By TO and the Project In-Service Date



PJM 5-Year Planning Horizon

Median For All PJM TO's: 13.9



- M3 process does not ensure accuracy of PJM RTEP Planning models as projects can begin construction without being finalized
- Projects are not formally incorporated into the PJM RTEP Planning Models until Local Plan is Finalized
  - Projects can and have gone into service prior to the Local Plan being finalized and the project incorporated into RTEP models
  - Concerned that the M3 process does not have project submission deadlines similar to those of Baseline RTEP projects
  - Lack of project submission requirements is preventing PJM's RTEP models from accurately representing the 5-year future system topology
  - This limits PJM's ability to manage and control its RTEP process