

**PROGRAM DESCRIPTION**

**Agriculture**

**HB Section(s): 6.105**

**Weights, Measures & Consumer Protection**

**Metrology Laboratory**

**1a. What strategic priority does this program address?**

Reach more consumers to promote and protect agriculture

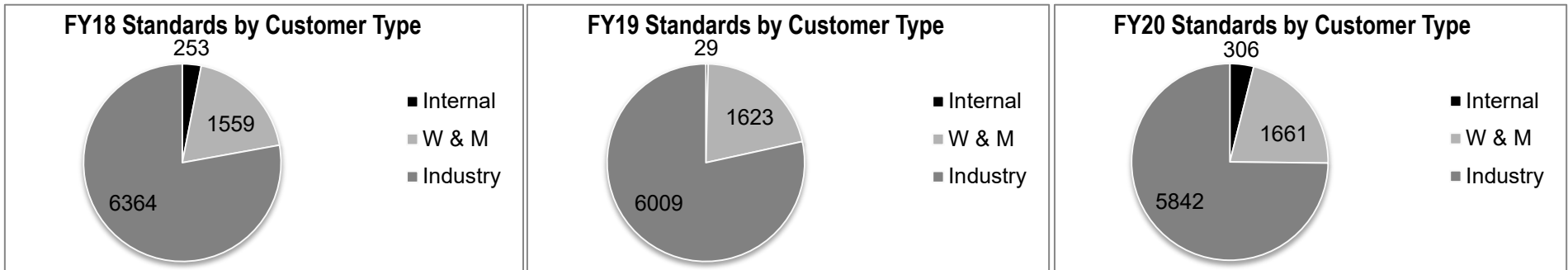
**1b. What does this program do?**

The Metrology Laboratory is the custodian of the State Weights and Measures Standards. These precision standards provide the traceable link to the standard international system (SI) through the National Institute of Standards and Technology (NIST) by an unbroken chain of comparisons. These calibrations ensure equity in commerce for each weighed or measured commodity bought or sold here in Missouri. The program objective:

- Ensure traceability of the state reference standards and measurement system to the international system of units (SI);
- Maintain laboratory accreditation with the National Institute of Standards and Technology (NIST);
- Establish a documented quality management system compliant to the ISO/IEC 17025 international standard;
- Provide traceable measurement service of field standards for the weights and measures division and industry;
- Protect laboratory standards and measurement and test equipment from damage, theft or vandalism, and exposure to harmful environmental effects;
- Develop and implement policies and procedures to assure the quality and accuracy of laboratory measurement results;
- Assure the quality of the laboratory measurement system through annual NIST audits, continuous training, and inter-laboratory comparison.

*'Note: In addition to the standards calibrated in support of our W & M program we also annually calibrate all the volumetric field standards for the Iowa W & M program and every two years we calibrate all the large volumetric field standards for the Arkansas W & M program. We also calibrate volumetric standards for some out of state industry customers.*

**2a. Provide an activity measure for the program.**



- Internal standards include laboratory primary working standards, secondary working standards, and process control standards.
- W & M field standards include all the mass and volumetric standards used by W & M inspectors to certify commercial weighing and measuring devices.
- Industry standards include everything not in the first two categories.

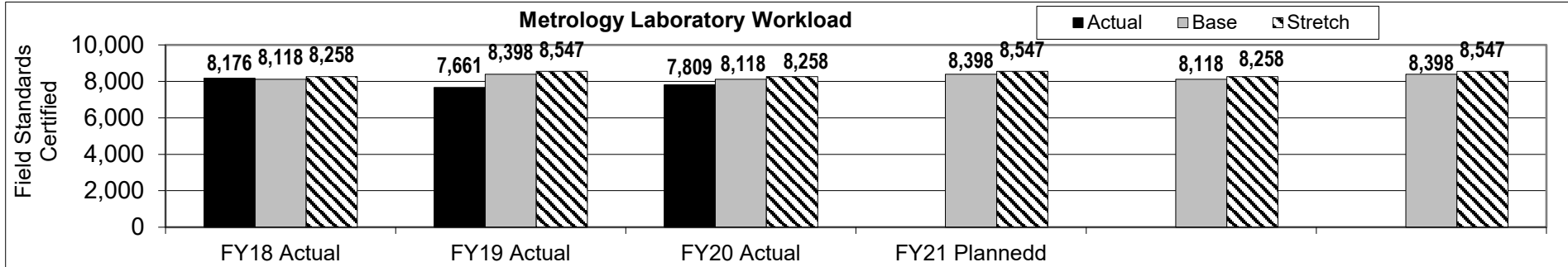
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Note: Annual workload fluctuation is because of a two year expiration of field standard certification. Odd years are typically more than even years.

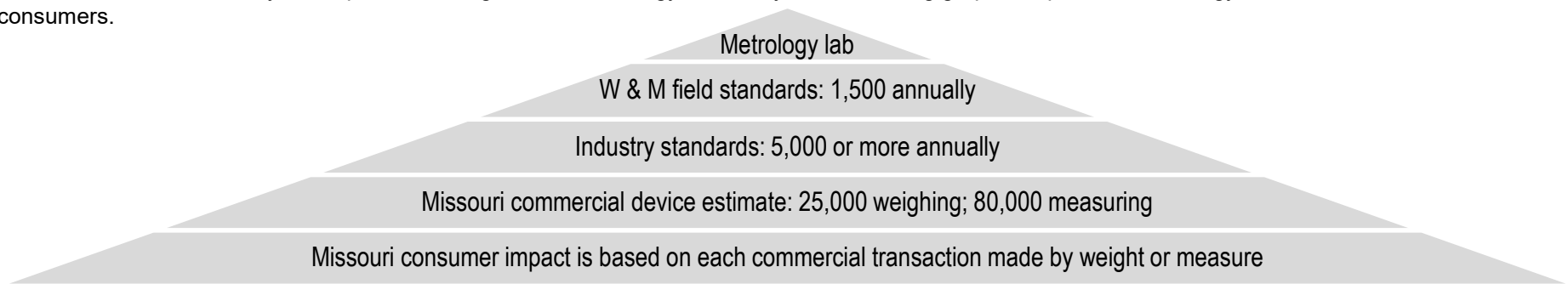
**2b. Provide a measure of the program's quality.**

- No standards have ever been recalled because of measurement error.
- The overall satisfaction rating since survey start August 2011 is 97.0% the stretch target is 97.5%

Customer Satisfaction Survey	Actual	Actual	Actual	Projected	Projected	Projected
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Number Supplied to Customer	241	219	178	210	170	210
Number Returned	10	3	3	1%	1%	1%
Satisfaction Percent	92.0%	100.0%	100.0%	98.0%	98.0%	98.0%

**2c. Provide a measure of the program's impact.**

The calibrations performed by this laboratory have a leveraging effect/impact. Every commodity bought or sold by weight or measure in Missouri traces back to the measurements made by the department of agriculture metrology laboratory. The following graphic depicts the metrology lab in reference to all Missouri consumers.



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**2d. Provide a measure of the program's efficiency.**

<https://www.nist.gov/sites/default/files/documents/2017/11/29/2016-slp-workload-survey.pdf>

Metrology laboratory workload ranking is listed below by calibration type according to the NIST 2016 and 2018 State Laboratory Program Workload Survey. This survey is published every two years and it is based on a calendar year. The lab has ranked in the upper one third since the survey began.

**2016 Survey**

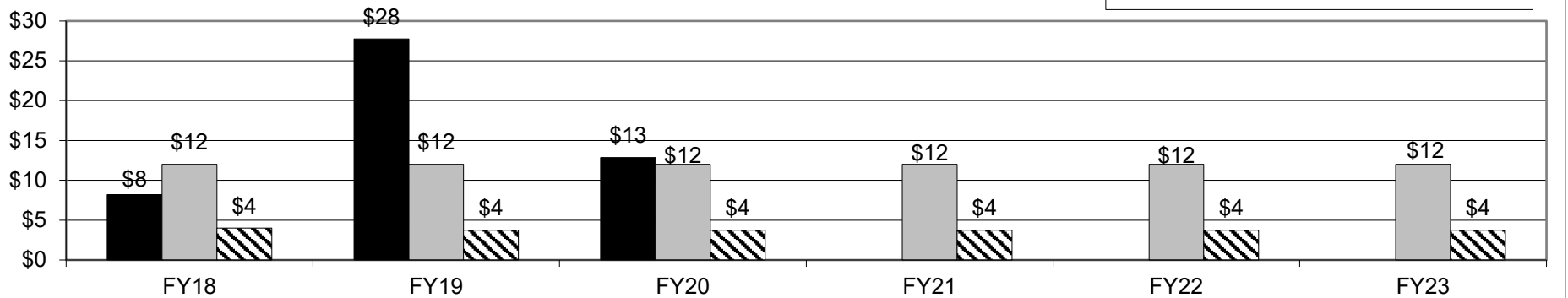
- Mass Echelon II: 11 of 27
- Mass Echelon III: 12 of 48
- Vehicle scale test carts: 10 of 31
- Glassware Gravimetric: 1 of 9
- Gravimetric (5 gal lab standards): 0 of 18
- Test Measures <= 5 gallons: 9 of 46
- Provers > 5 gallons <= 100 gallons: 12 of 39
- Provers > 100 gallons: 21 of 30
- LPG Provers: 10 of 25

**2018 Survey**

- Mass Echelon II: 13 of 27
- Mass Echelon III: 14 of 45
- Vehicle scale test carts: 16 of 30
- Glassware Gravimetric: None calibrated in 2018
- Gravimetric (5 gal lab standards): 4 of 16
- Test Measures <= 5 gallons: 10 of 44
- Provers > 5 gallons <= 100 gallons: 15 of 38
- Provers > 100 gallons: 24 of 28
- LPG Provers: 9 of 29

*The metrology program efficiency goal is to perform as many laboratory standard calibrations as possible in-house to reduce outsource calibration expense. This will also provide the laboratory a greater level of measurement quality control confidence.*

**Average Cost per Standard Calibrated**



Cost fluctuations are a result of equipment purchases and/or facility upgrades.

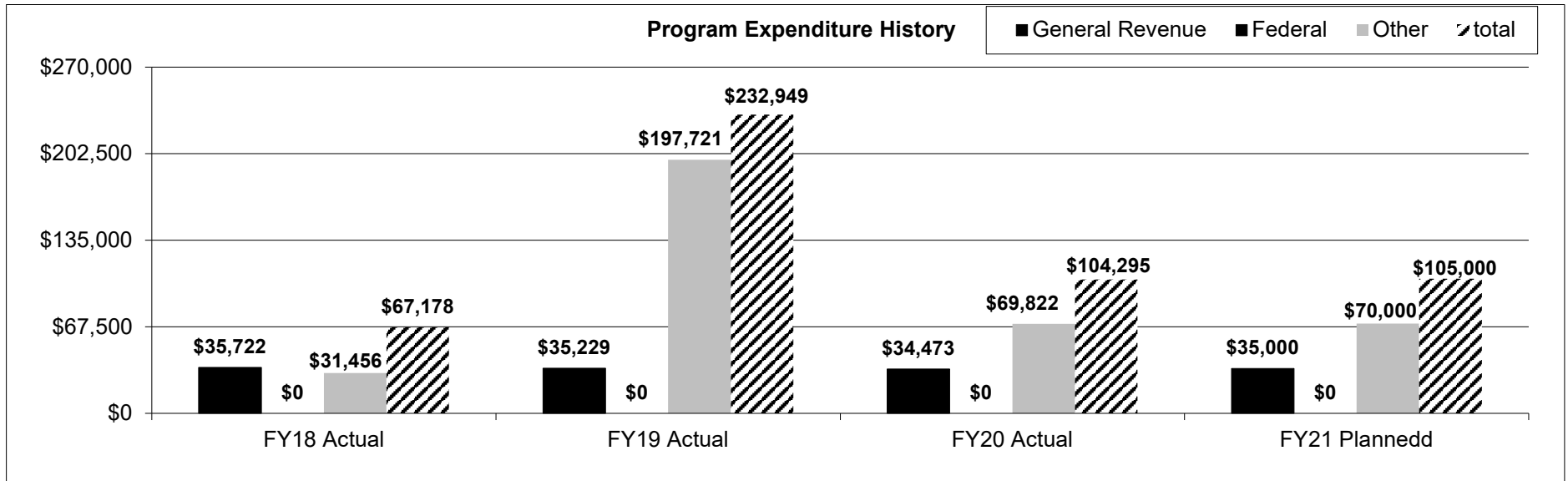
FY2019 cost increase is from the purchase of four mass comparators. (Mass comparators are replaced every 20 years).

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**3. Provide actual expenditures for the prior three fiscal years; planned expenditures for the current fiscal year. (Note: Amounts do not include fringe benefit costs.)**



**4. What are the sources of the "Other " funds?**

Ag Protection Fund (0970)

**5. What is the authorization for this program, i.e., federal or state statute, etc.? (Include the federal program number, if applicable.)**

Chapter 413.015.(3) and 413.045 RSMo.

**6. Are there federal matching requirements? If yes, please explain.**

No

**7. Is this a federally mandated program? If yes, please explain.**

No