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# Public Safety Personnel Retirement System Corrections Officer Retirement Plan

Defined Contribution and Retirement  
Study Committee Meeting  
December 13, 2011

**Data & Projection Refinements**

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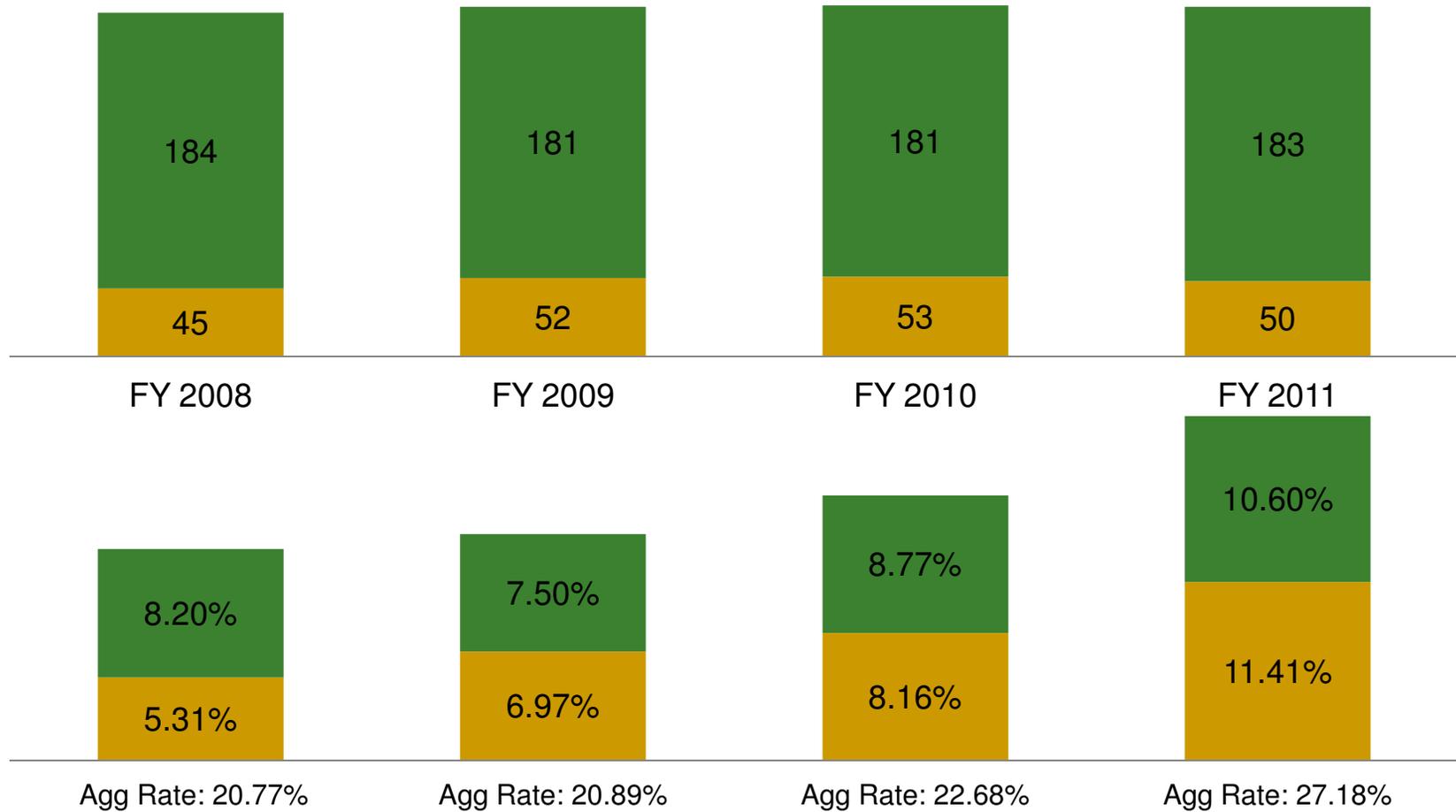
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# Converting from Multiple Employer Plan to Single Employer Plan

## Winners & Losers

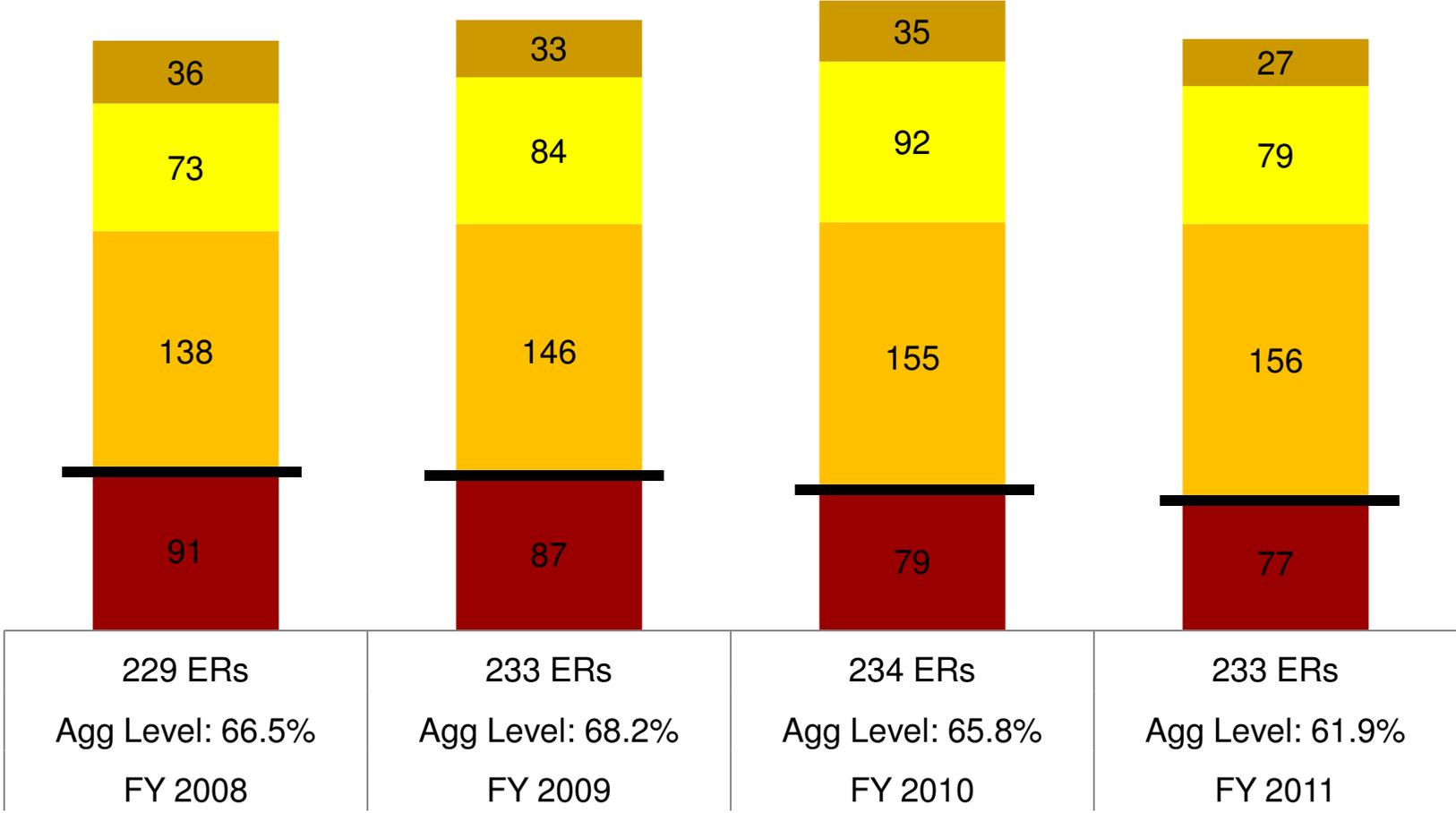
# PSPRS Winners & Losers: ER Rates

■ Winners (avg rate decrease)    
 ■ Losers (avg rate increase)



# PSPRS Winners & Losers: Funding Levels

■ < Agg Level  
 ■ > Agg Level  
 ■ > 80% Funded  
 ■ > 100% Funded



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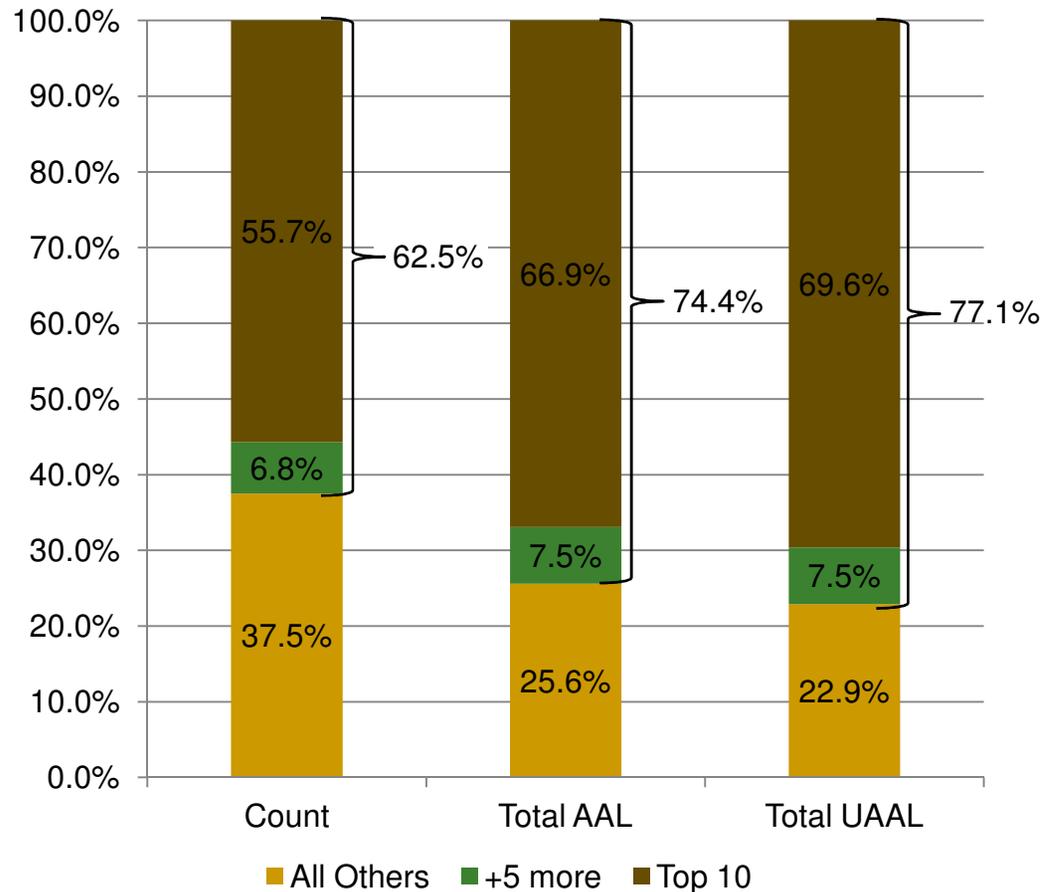
# Multi-Employer Groups

Various Scenarios

# Scenario 1

## Top 10-15 Employers v. All Others

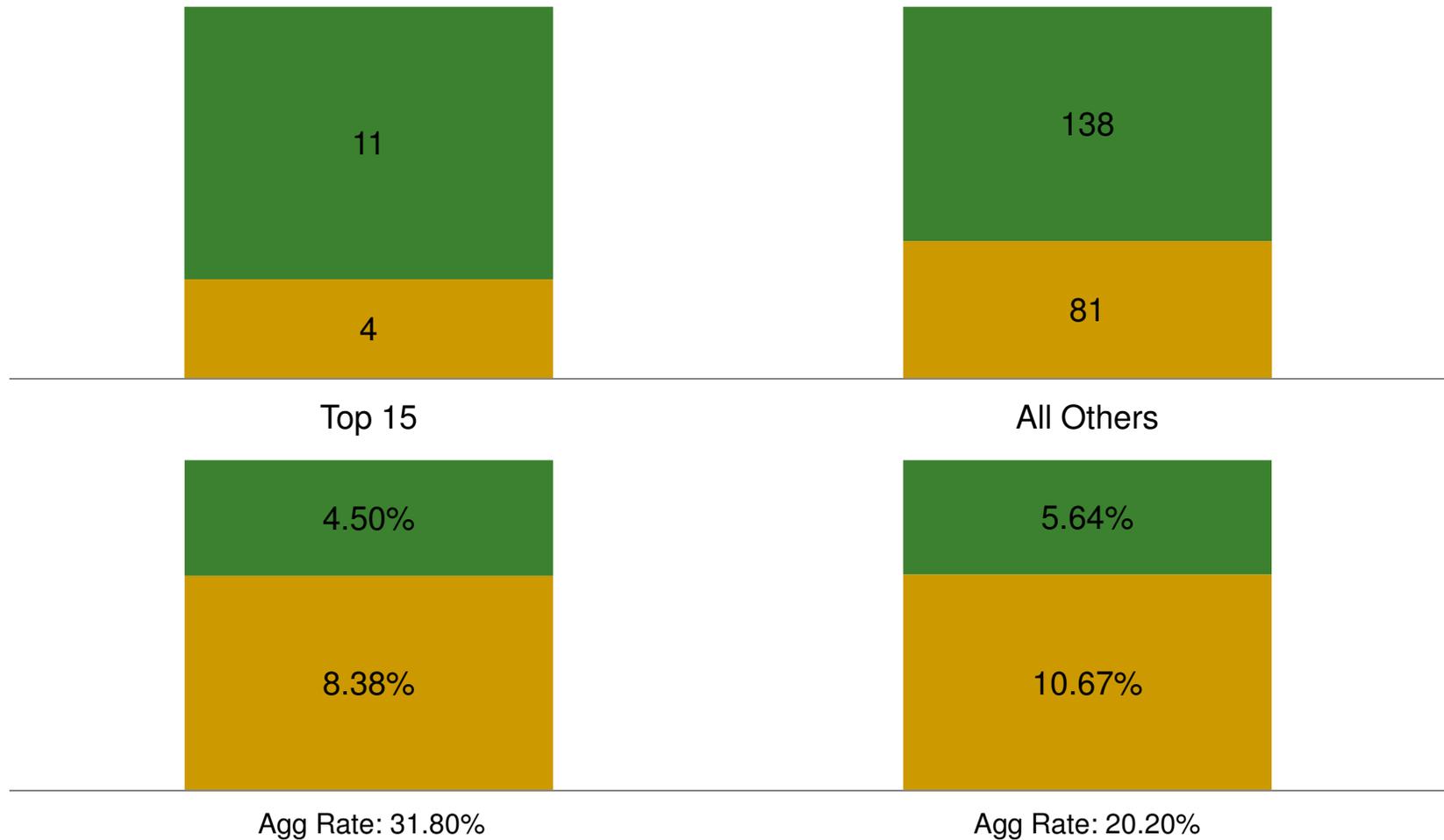
1. Phoenix Police Department
2. Phoenix Fire Department
3. Department of Public Safety
4. Tucson Police Department
5. Mesa Police Department
6. Tucson Fire Department
7. Maricopa County Sheriff's Office
8. Pima County Sheriff's Department
9. Mesa Fire Department
10. Scottsdale Police Department
11. Tempe Police Department
12. Glendale Police Department
13. Chandler Police Department
14. Tempe Fire Department
15. Glendale Fire Department



Percentages are based on June 30, 2011 valuations. Count is total membership (actives, vested, DROP, retired). AAL = Actuarial Accrued Liability. UAAL = Unfunded AAL.

# Scenario 1 Winners & Losers: ER Rates

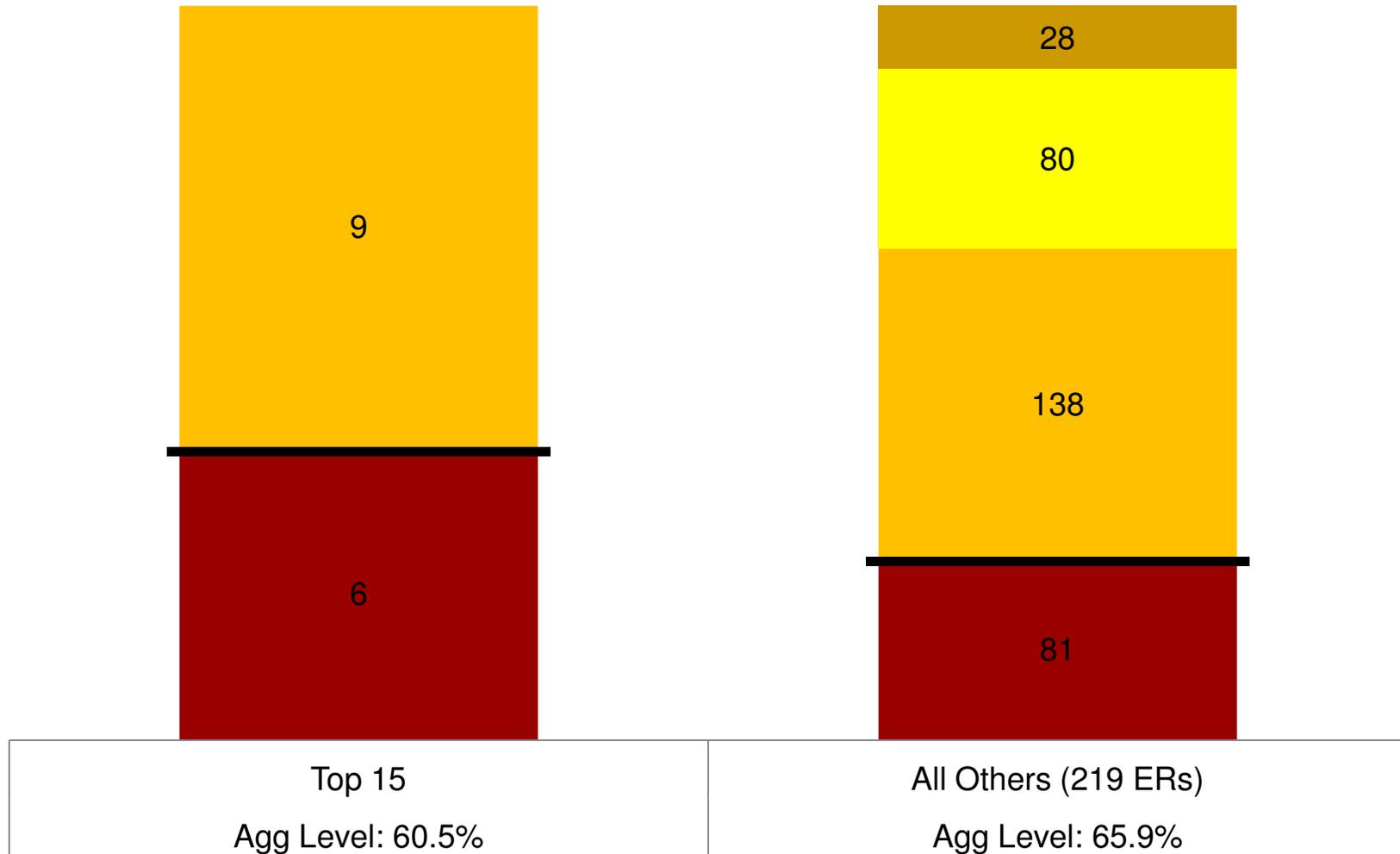
■ Winners (avg rate decrease)     
 ■ Losers (avg rate increase)



*Please note that the results were calculated based upon the actuarial assumptions for the group as a whole. Experience for the various subdivisions may be very different than the current pooled group assumptions. It is important to note that when comparing contribution rates, each group has different demographic characteristics. The ratio of actives to retirees differs from group to group and groups with lower ratios generally have more volatile contribution rates as there is less payroll to spread costs over.*

## Scenario 1 Winners & Losers: Funding Levels

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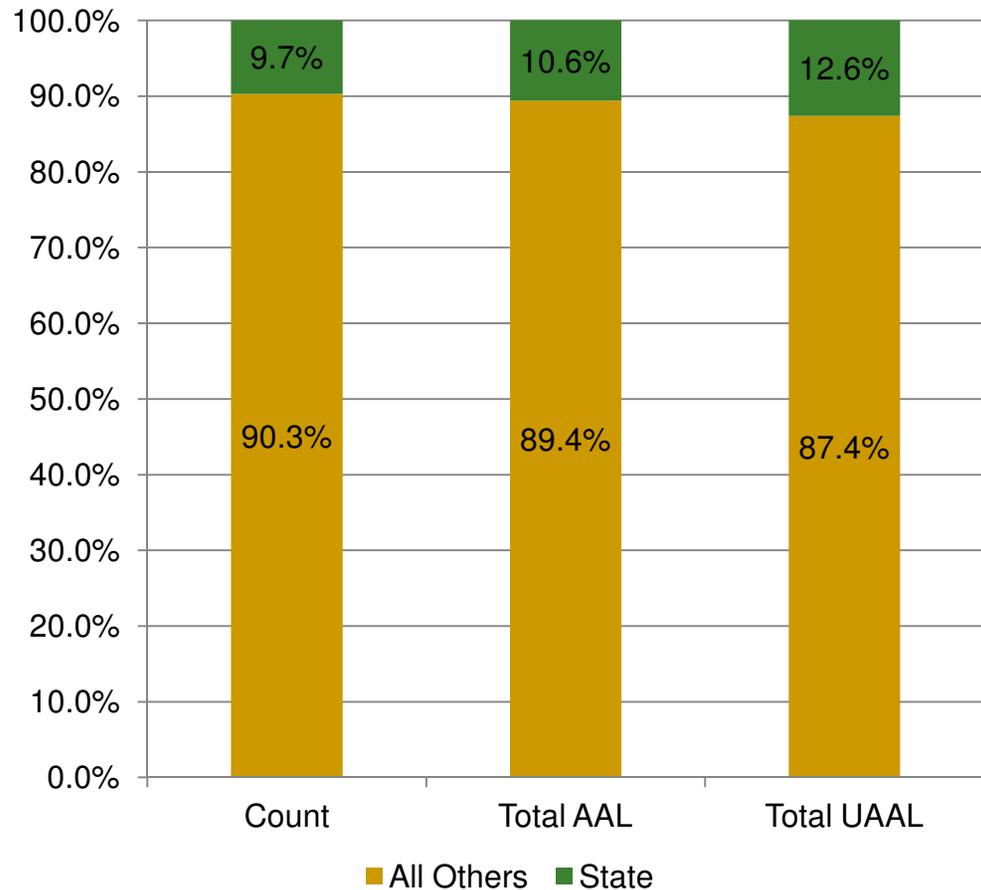


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# Scenario 2

## State Agencies v. All Others

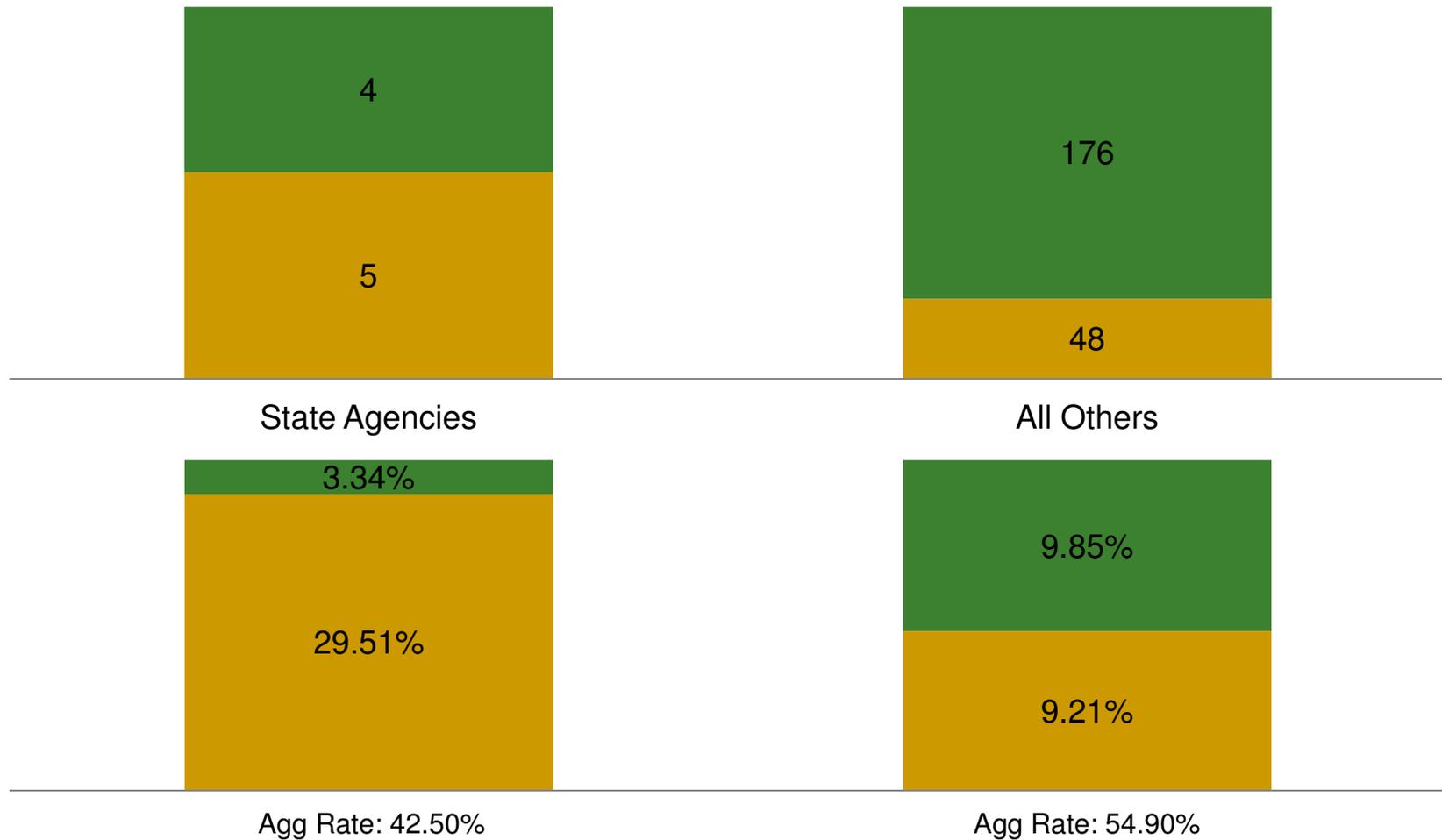
- ASU Campus Police
- AZ Attorney General Investigators
- AZ Department of Emergency & Military Affairs
- AZ Department of Liquor License & Control Investigators
- AZ Department of Public Safety
- AZ Game and Fish Department
- AZ State Park Rangers
- NAU Campus Police
- U of A Campus Police Department



Percentages are based on June 30, 2011 valuations. Count is total membership (actives, vested, DROP, retired). AAL = Actuarial Accrued Liability. UAAL = Unfunded AAL.

## Scenario 2 Winners & Losers: ER Rates

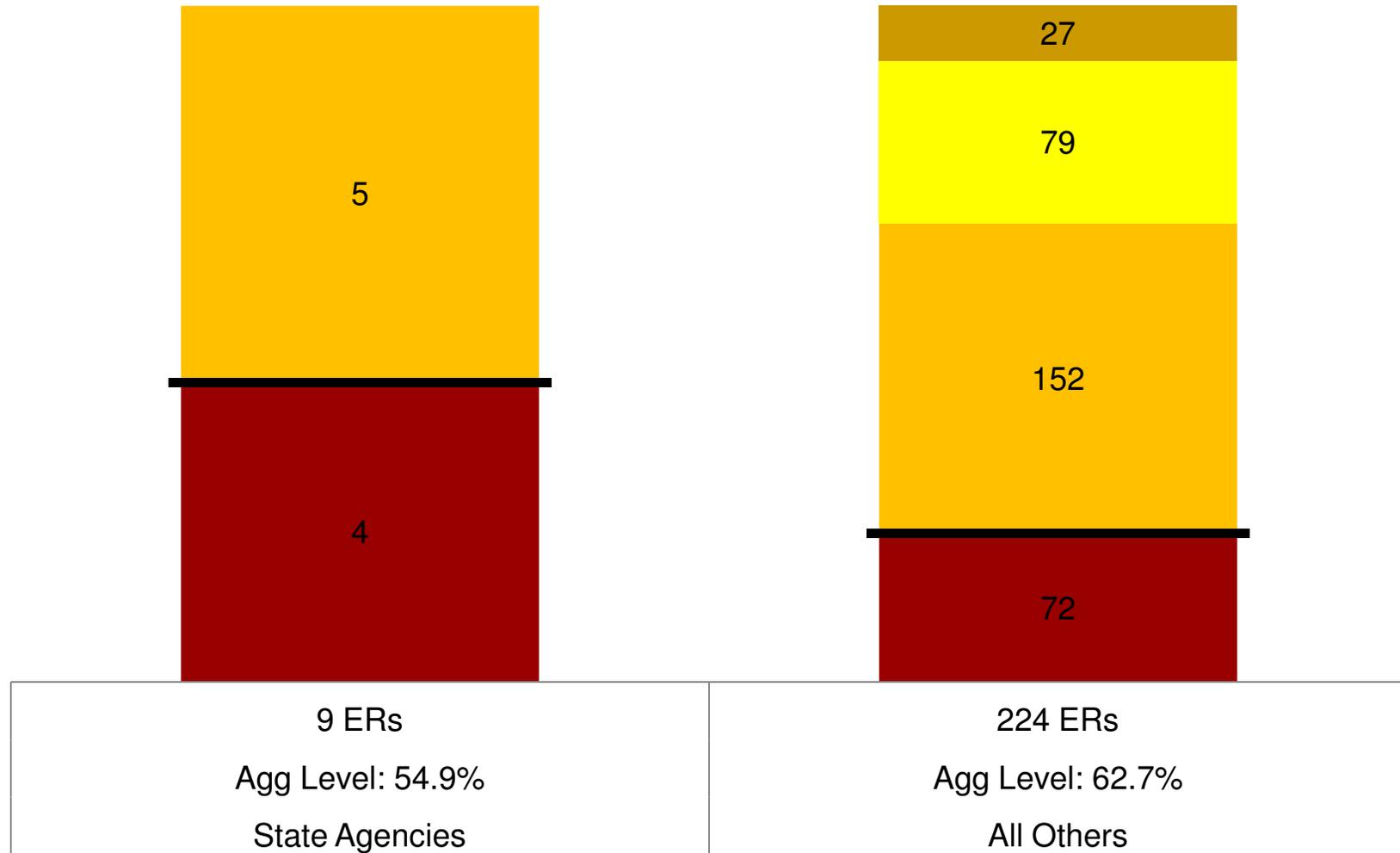
■ Winners (avg rate decrease)     
 ■ Losers (avg rate increase)



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## Scenario 2 Winners & Losers: Funding Levels

■ < Agg Level   ■ > Agg Level   ■ > 80% Funded   ■ > 100% Funded

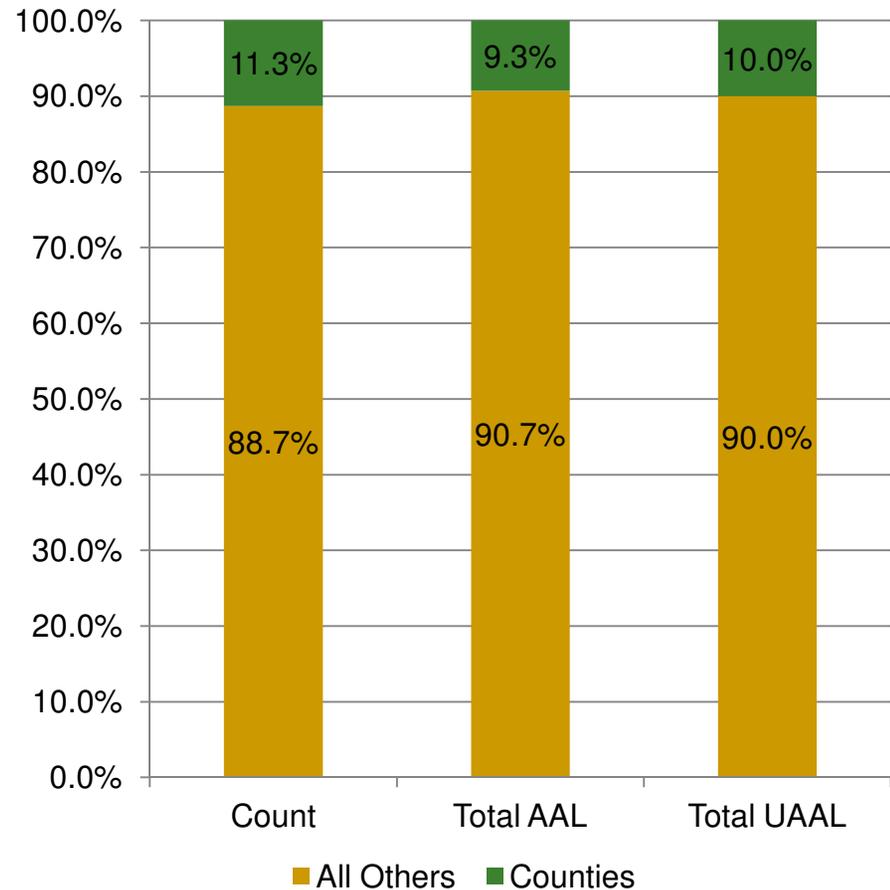


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# Scenario 3

## County Employers v. All Others

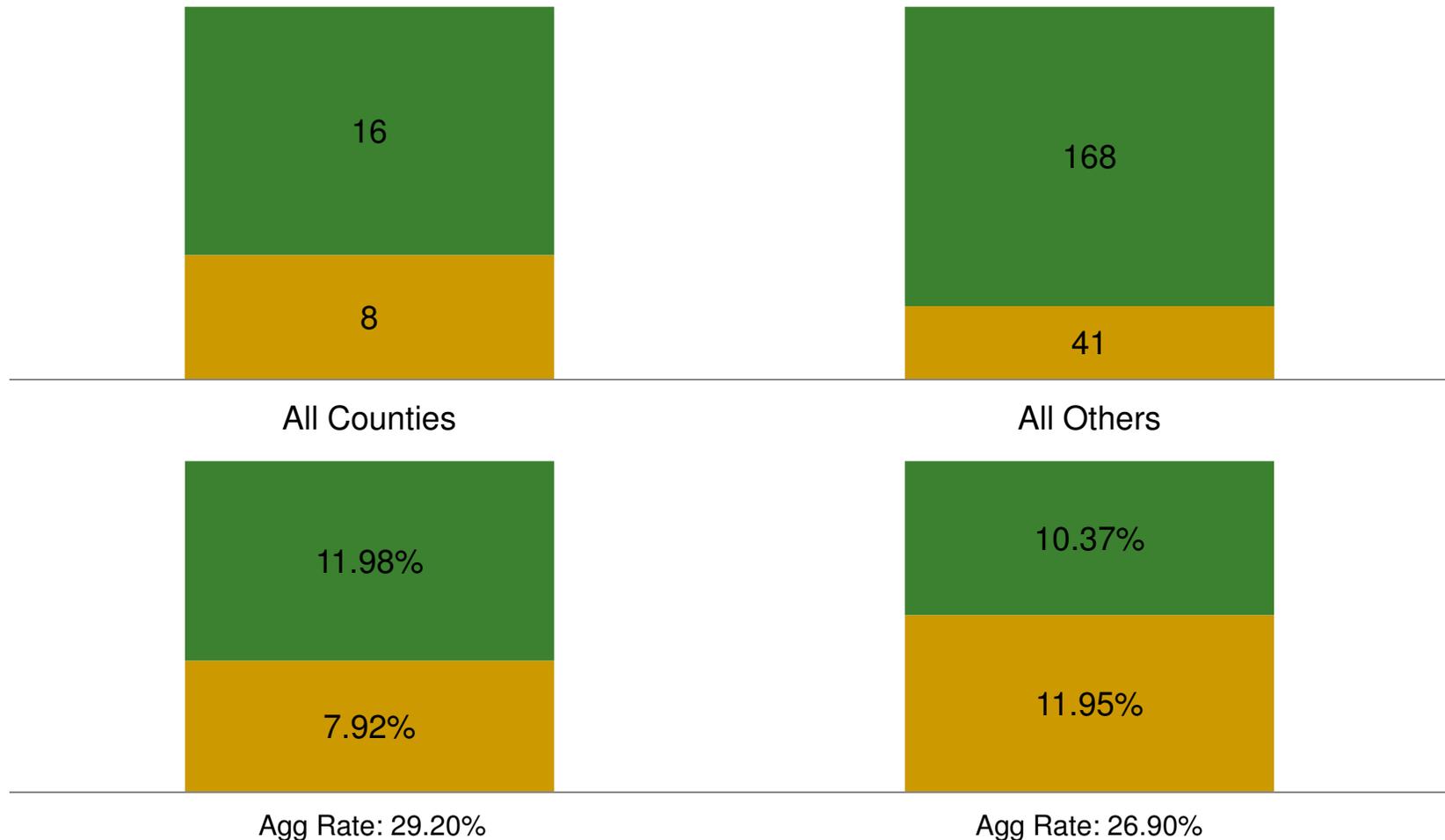
- Apache County Sheriff's Department
- Cochise County Sheriff's Dept
- Coconino County Sheriff's Dept
- Gila County Sheriff's Department
- Graham County Attorney Investigators
- Graham County Sheriff's Department
- Greenlee County Attorney Investigators
- Greenlee County Sheriff's Department
- La Paz County Attorney Investigators
- La Paz County Sheriff's Department
- Maricopa County Attorney Investigators
- Maricopa County Park Rangers
- Maricopa County Sheriff's Office
- Mohave County Sheriff's Department
- Navajo County Attorney Investigators
- Navajo County Sheriff's Department
- Pima County Attorney Investigators
- Pima County Comm. College Police
- Pima County Sheriff's Department
- Pinal County Sheriff's Department
- Santa Cruz County Sheriff's Department
- Yavapai County Attorney Investigators
- Yavapai County Sheriff's Department
- Yuma County Sheriff's Department



Percentages are based on June 30, 2011 valuations. Count is total membership (actives, vested, DROP, retired). AAL = Actuarial Accrued Liability. UAAL = Unfunded AAL.

## Scenario 3 Winners & Losers: ER Rates

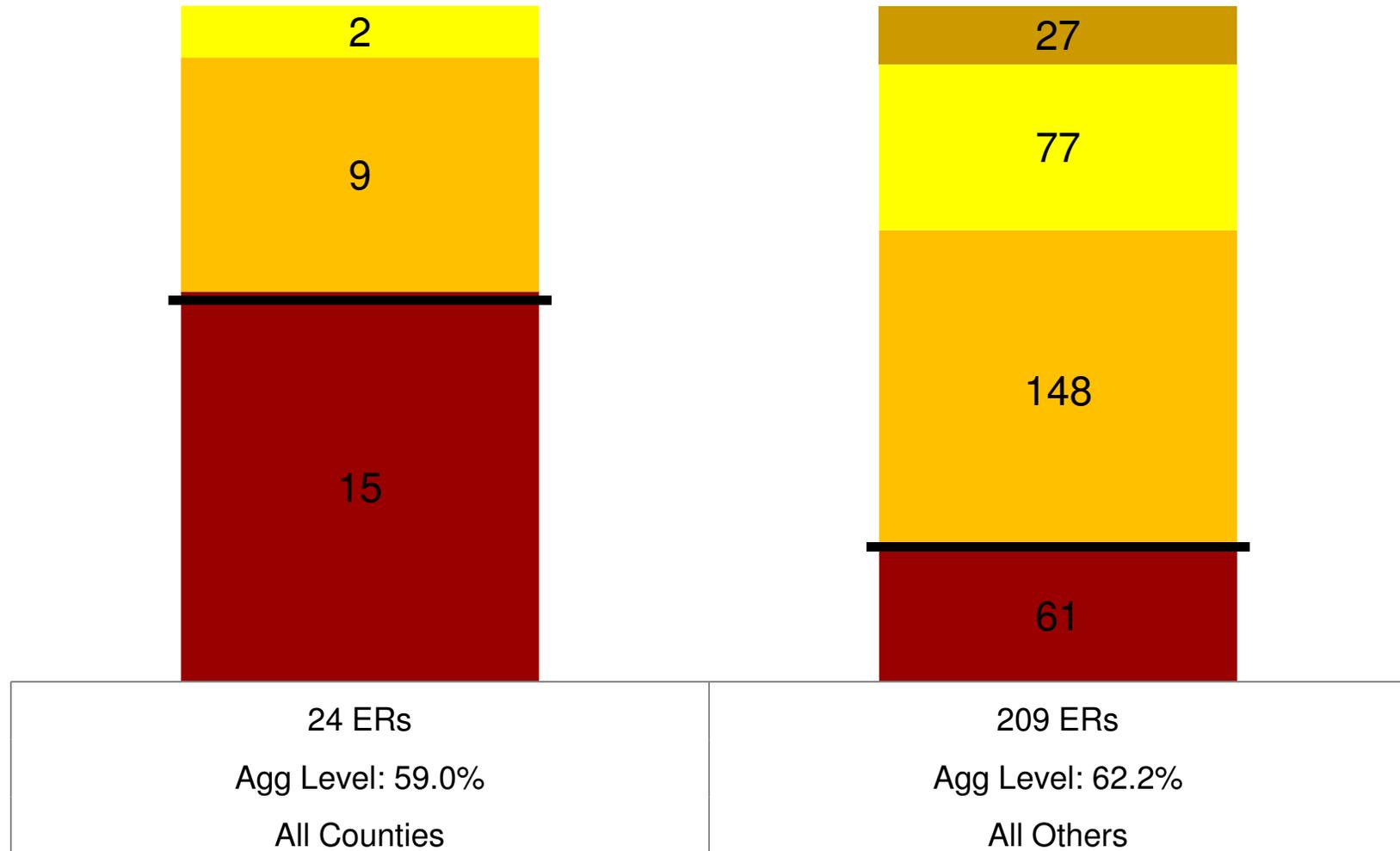
■ Winners (avg rate decrease)     
 ■ Losers (avg rate increase)



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## Scenario 3 Winners & Losers: Funding Levels

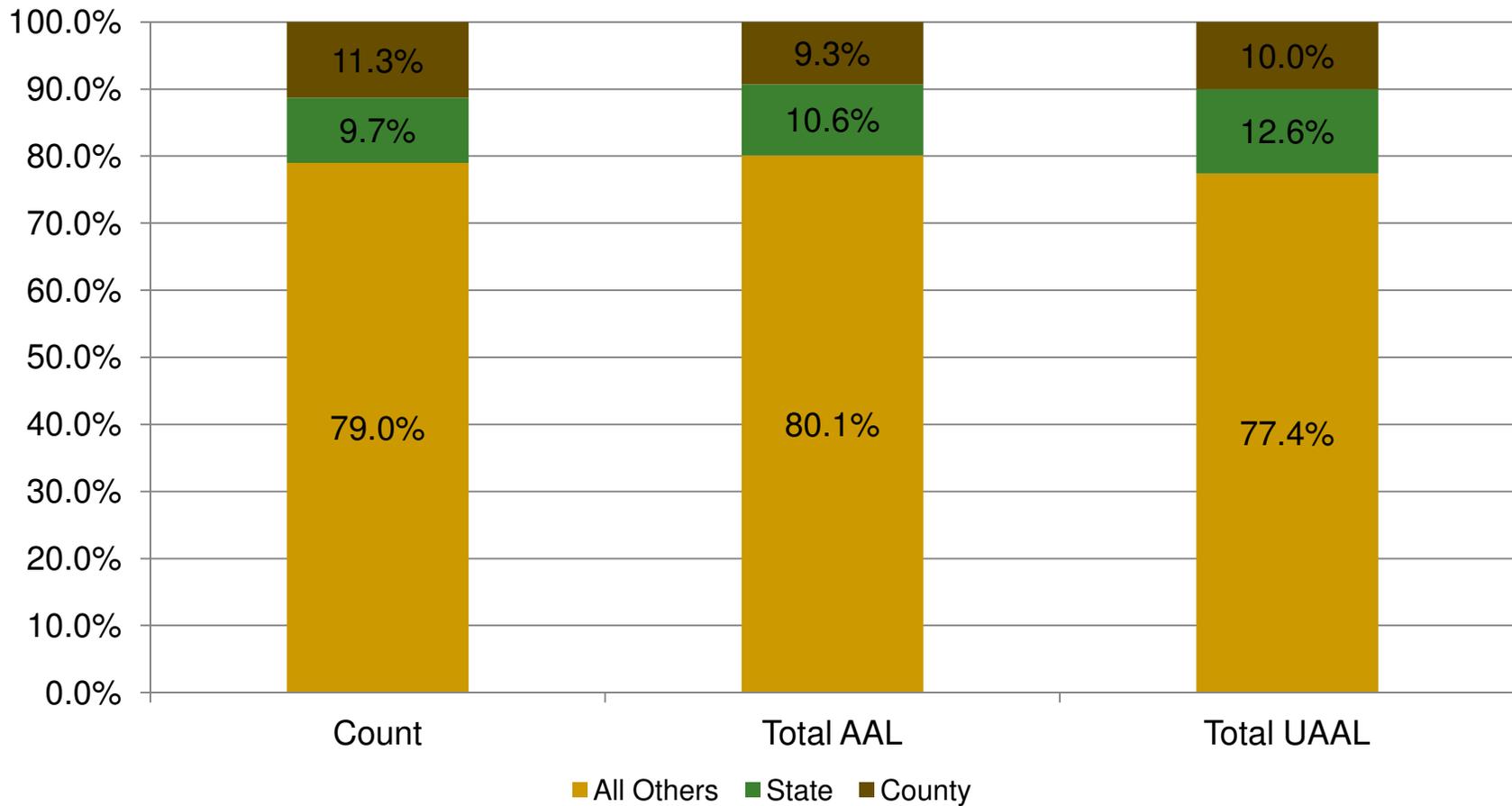
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# Scenario 4

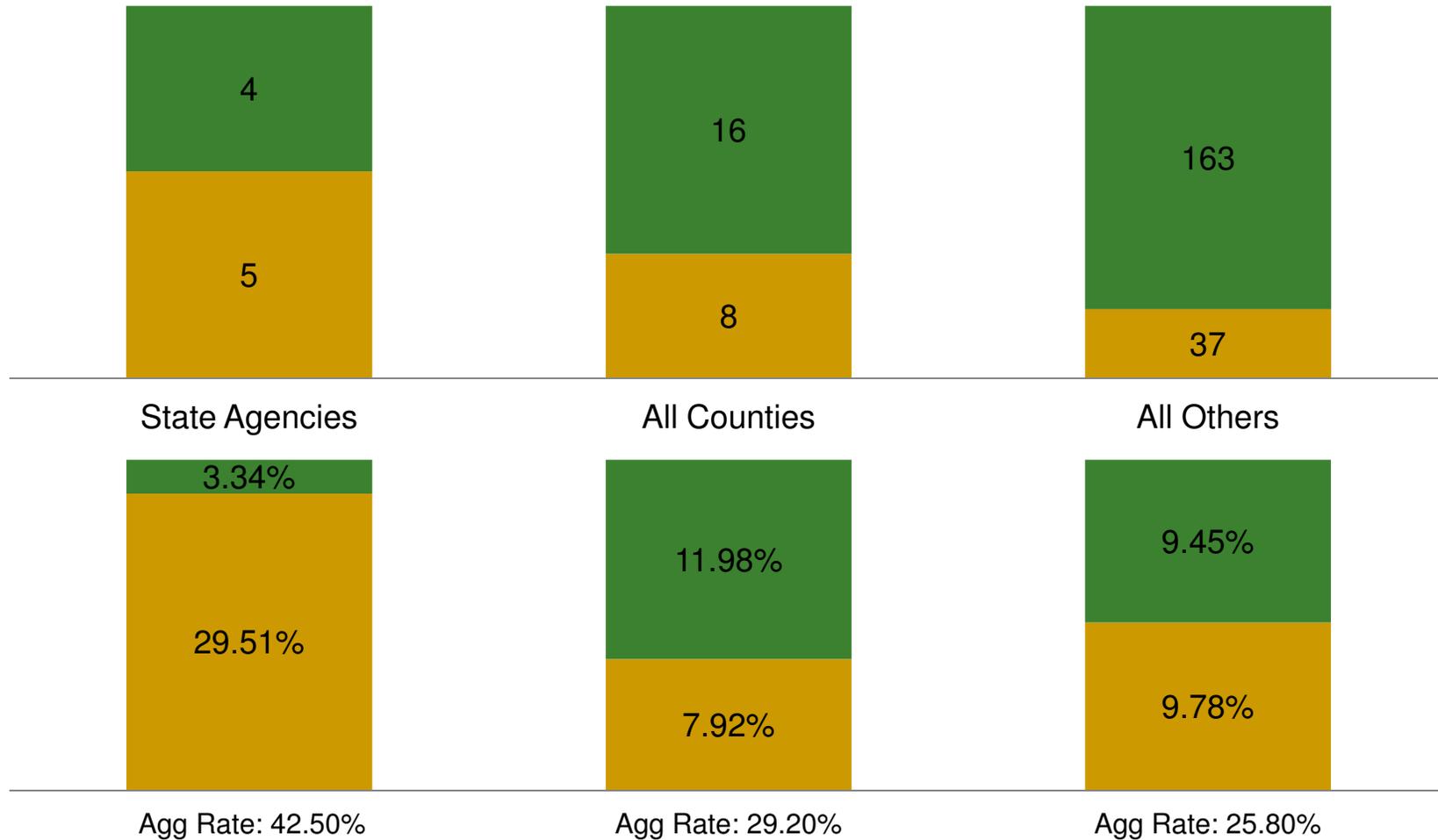
State Agencies v. County Employers v. All Others



Percentages are based on June 30, 2011 valuations. Count is total membership (actives, vested, DROP, retired). AAL = Actuarial Accrued Liability. UAAL = Unfunded AAL.

# Scenario 4 Winners & Losers: ER Rates

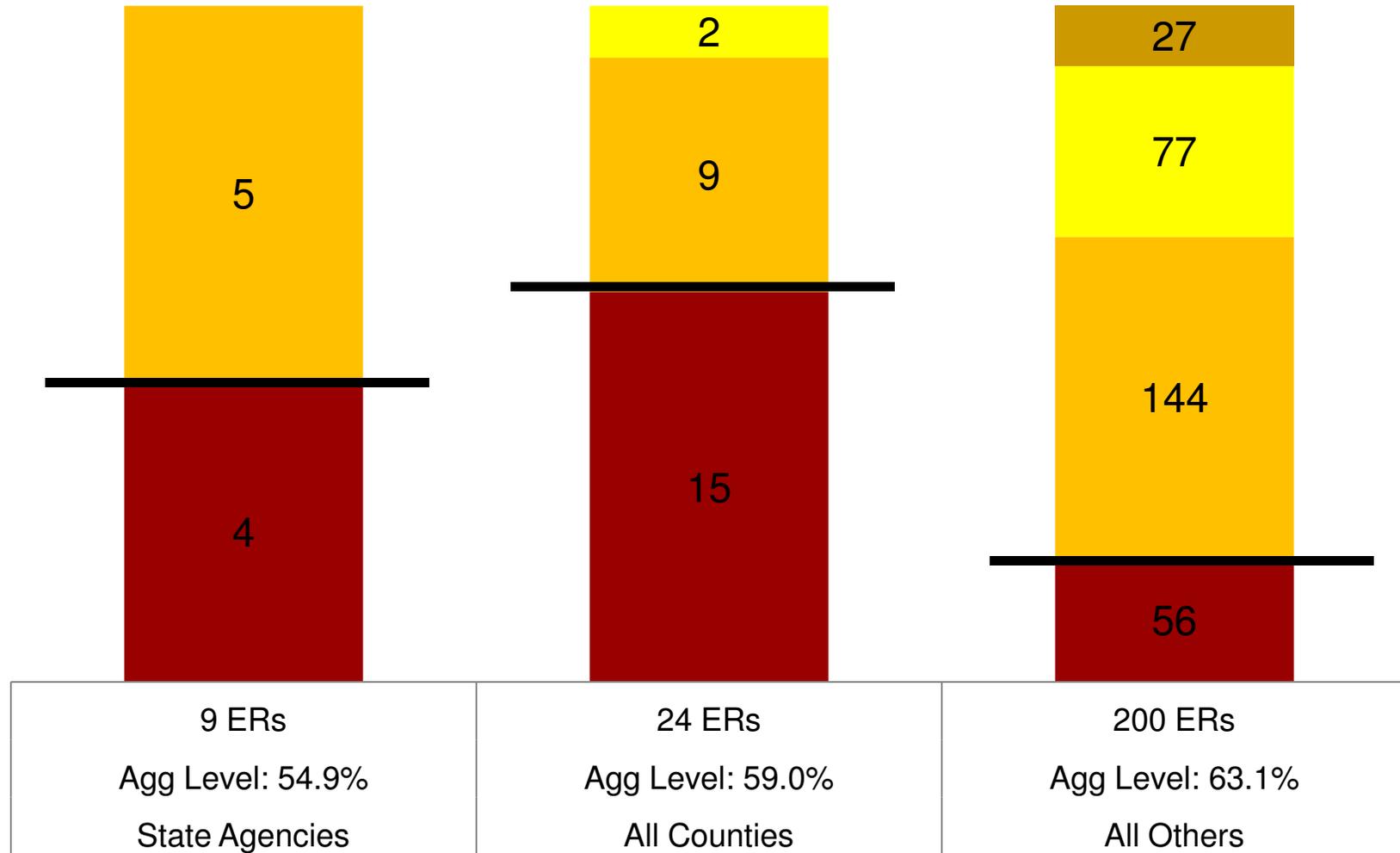
■ Winners (avg rate decrease)     
 ■ Losers (avg rate increase)



Please note that the results were calculated based upon the actuarial assumptions for the group as a whole. Experience for the various subdivisions may be very different than the current pooled group assumptions. It is important to note that when comparing contribution rates, each group has different demographic characteristics. The ratio of actives to retirees differs from group to group and groups with lower ratios generally have more volatile contribution rates as there is less payroll to spread costs over.

## Scenario 4 Winners & Losers: Funding Levels

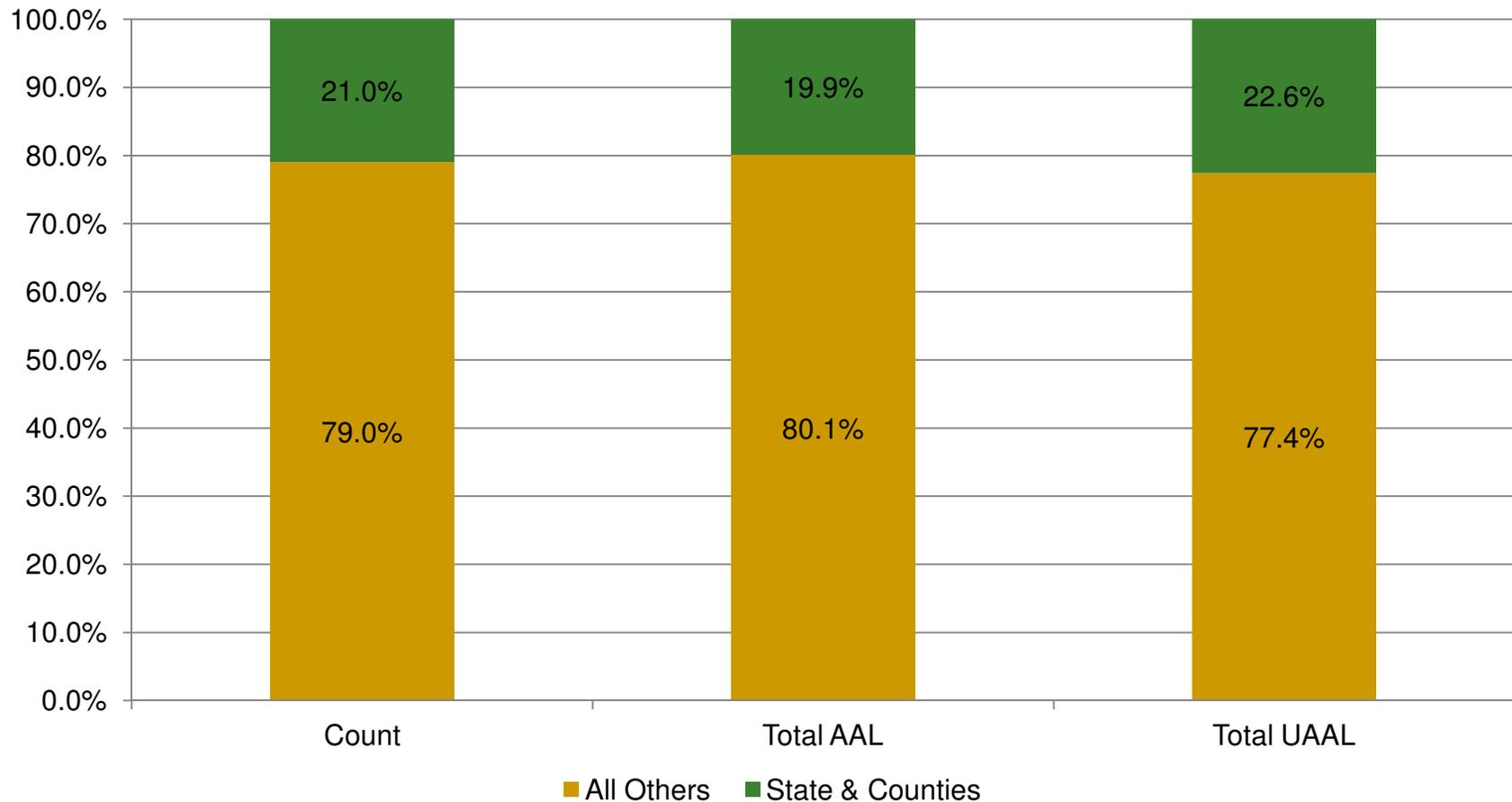
■ < Agg Level  
 ■ > Agg Level  
 ■ > 80% Funded  
 ■ > 100% Funded



Please note that the results were calculated based upon the actuarial assumptions for the group as a whole. Experience for the various subdivisions may be very different than the current pooled group assumptions. It is important to note that when comparing contribution rates, each group has different demographic characteristics. The ratio of actives to retirees differs from group to group and groups with lower ratios generally have more volatile contribution rates as there is less payroll to spread costs over.

# Scenario 5

## State Agencies & County Employers v. All Others



Percentages are based on June 30, 2011 valuations. Count is total membership (actives, vested, DROP, retired). AAL = Actuarial Accrued Liability. UAAL = Unfunded AAL.

# Scenario 5 Winners & Losers: ER Rates

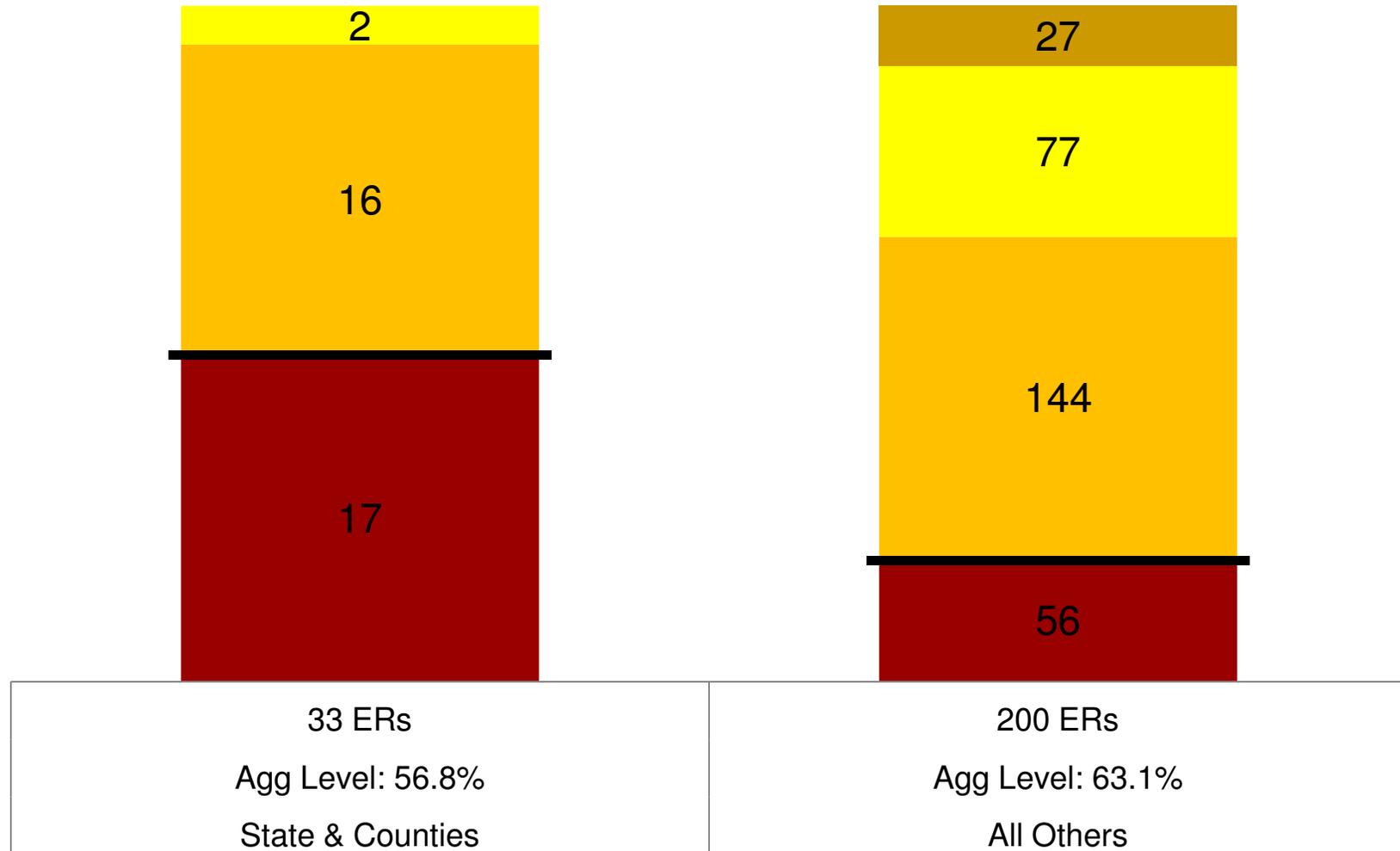
■ Winners (avg rate decrease)     
 ■ Losers (avg rate increase)



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## Scenario 5 Winners & Losers: Funding Levels

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Please note that the results were calculated based upon the actuarial assumptions for the group as a whole. Experience for the various subdivisions may be very different than the current pooled group assumptions. It is important to note that when comparing contribution rates, each group has different demographic characteristics. The ratio of actives to retirees differs from group to group and groups with lower ratios generally have more volatile contribution rates as there is less payroll to spread costs over.

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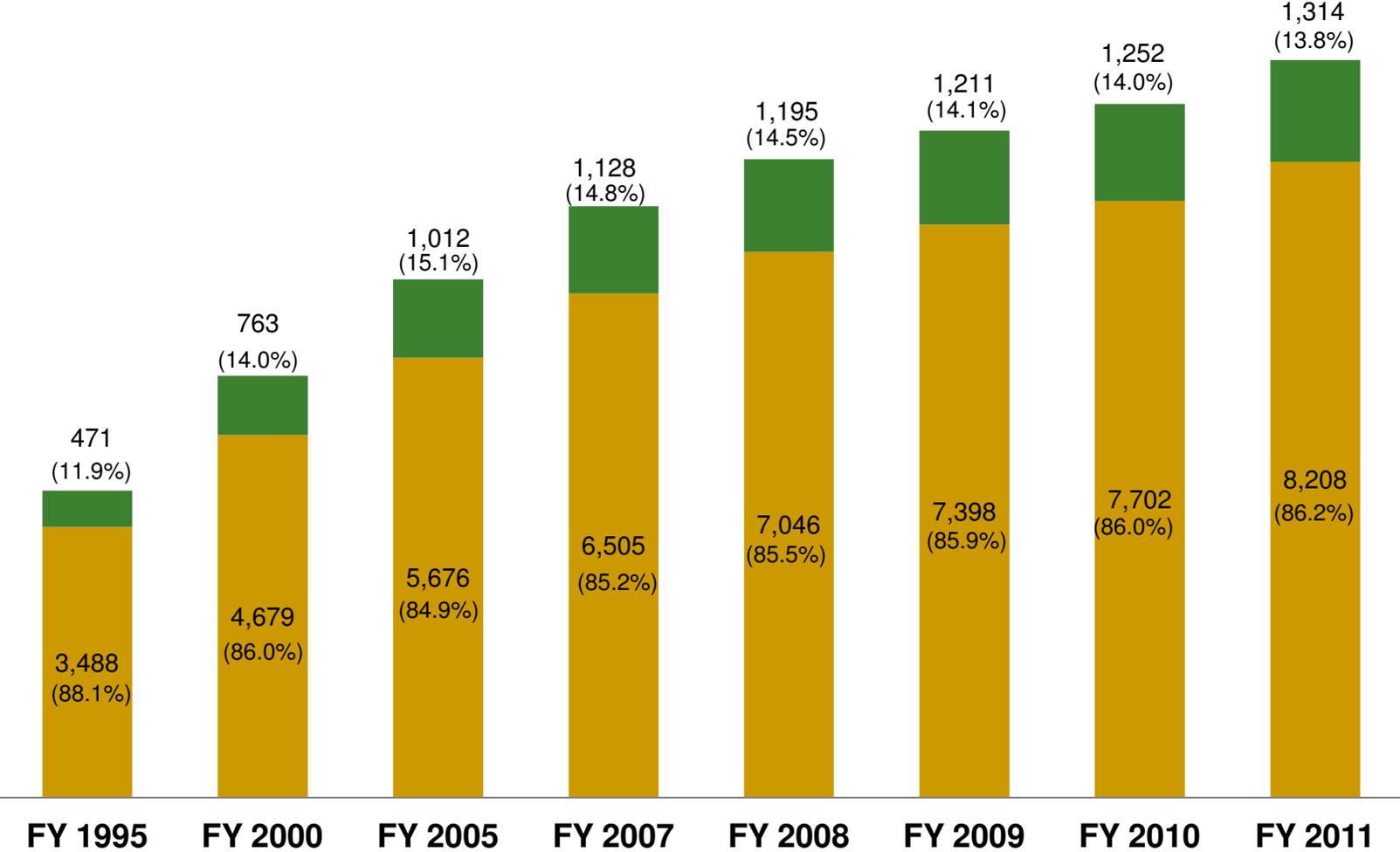
# Disabilities

PSPRS & CORP

Historical Pension Distributions

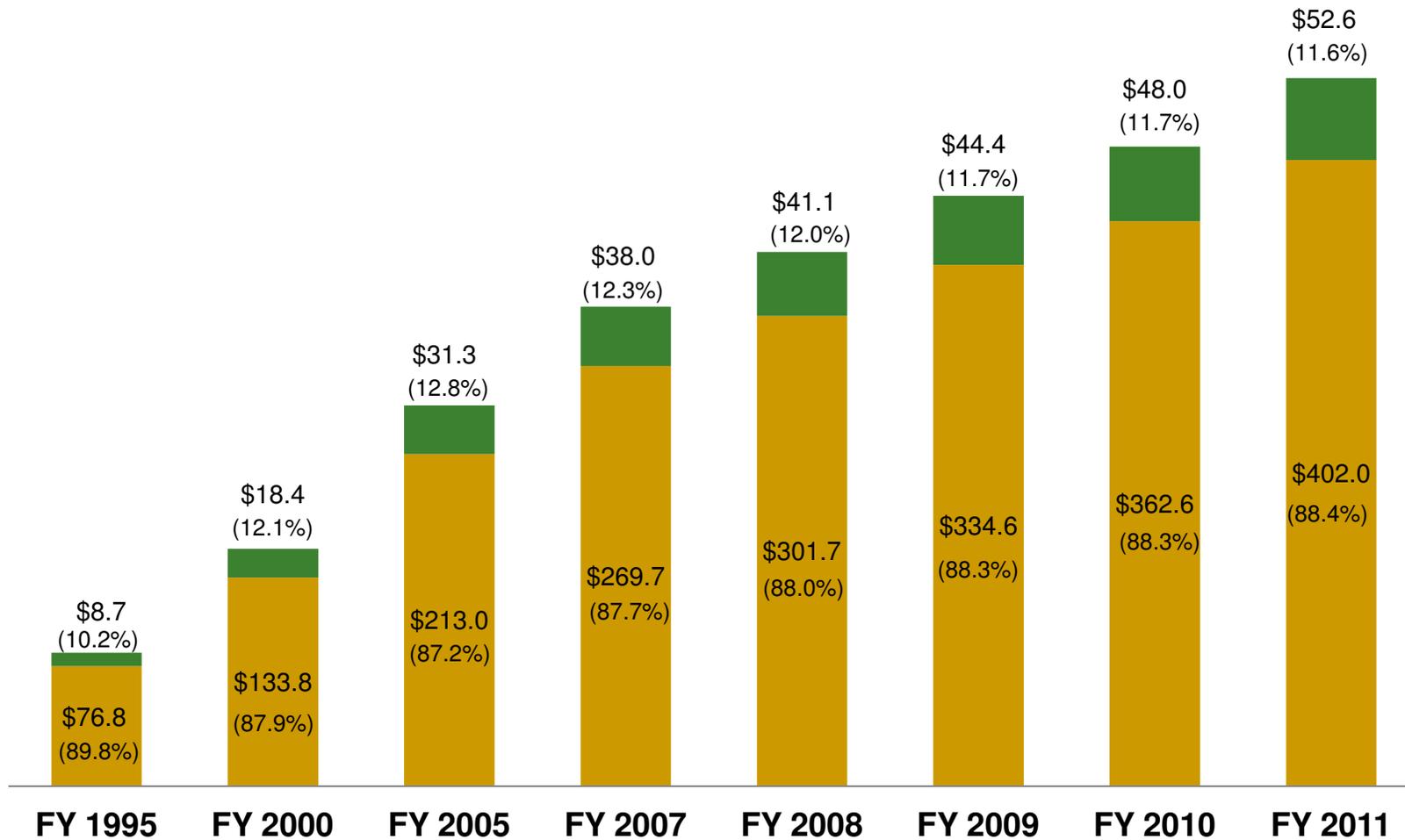
# PSPRS Pension Distribution by Numbers

■ Normal (includes survivors)   ■ Disability



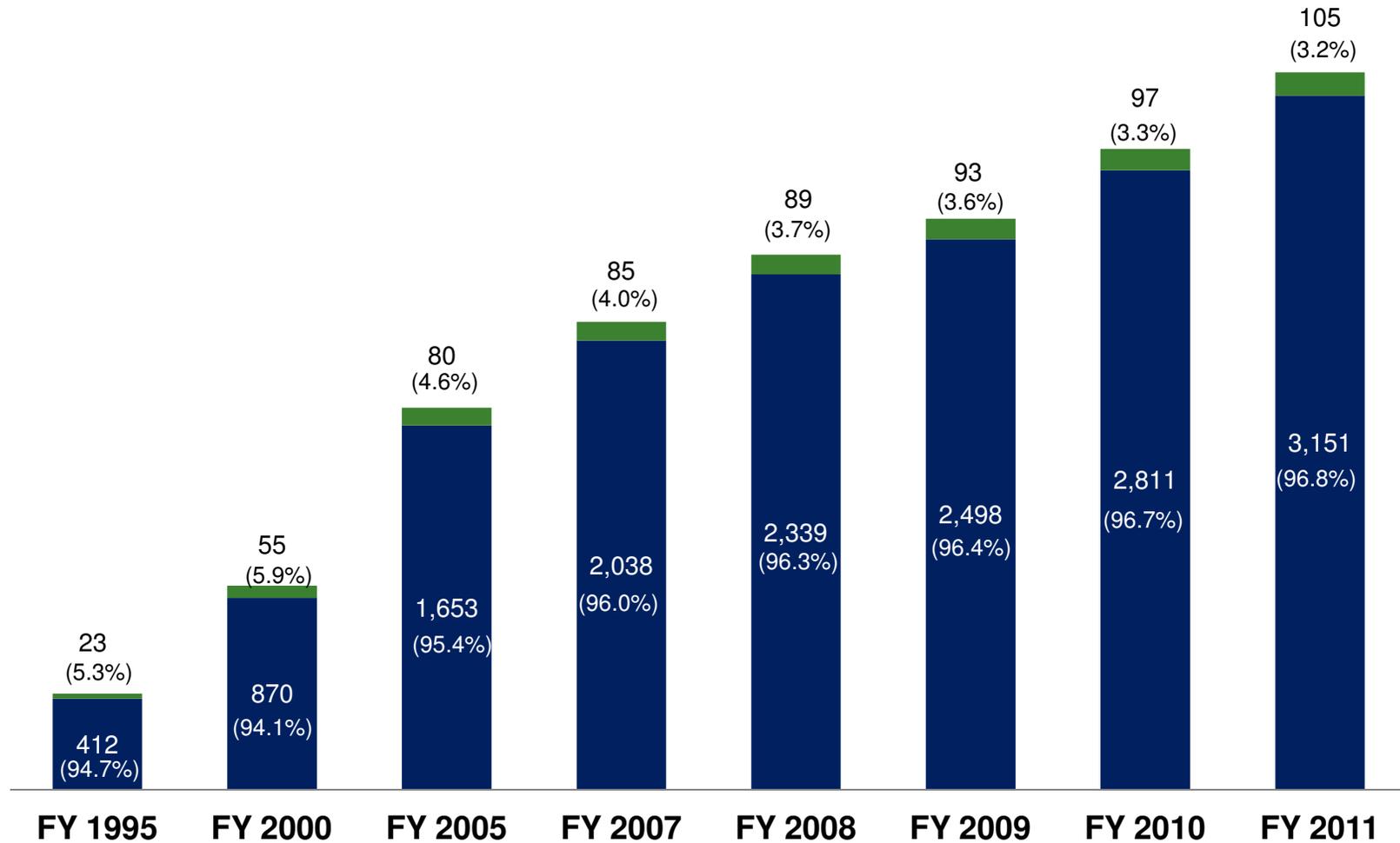
## PSPRS Pension Distribution by Dollars (in millions)

■ Normal (includes survivors) ■ Disability



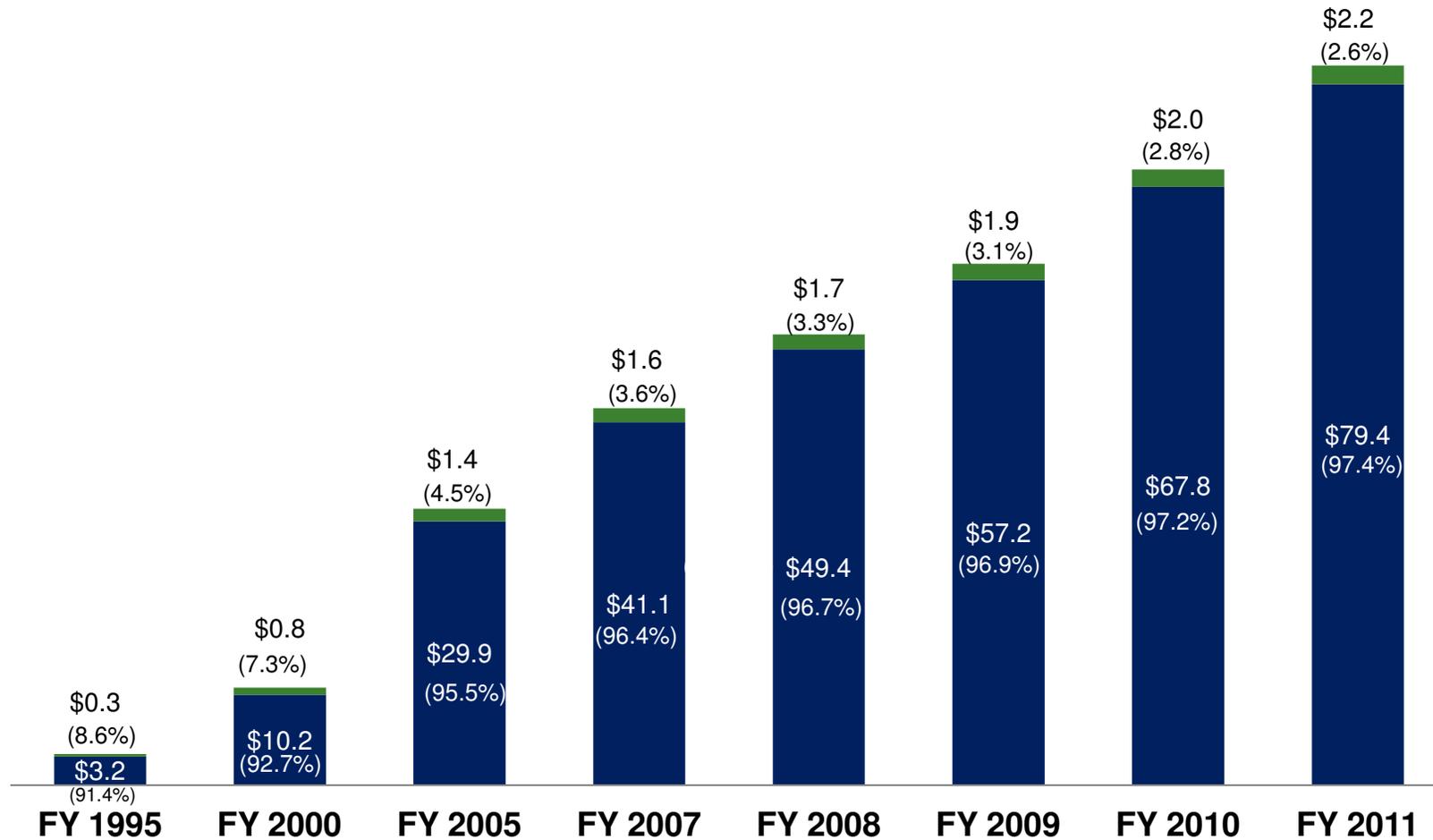
# CORP Pension Distribution by Numbers

■ Normal (includes survivors) ■ Disability

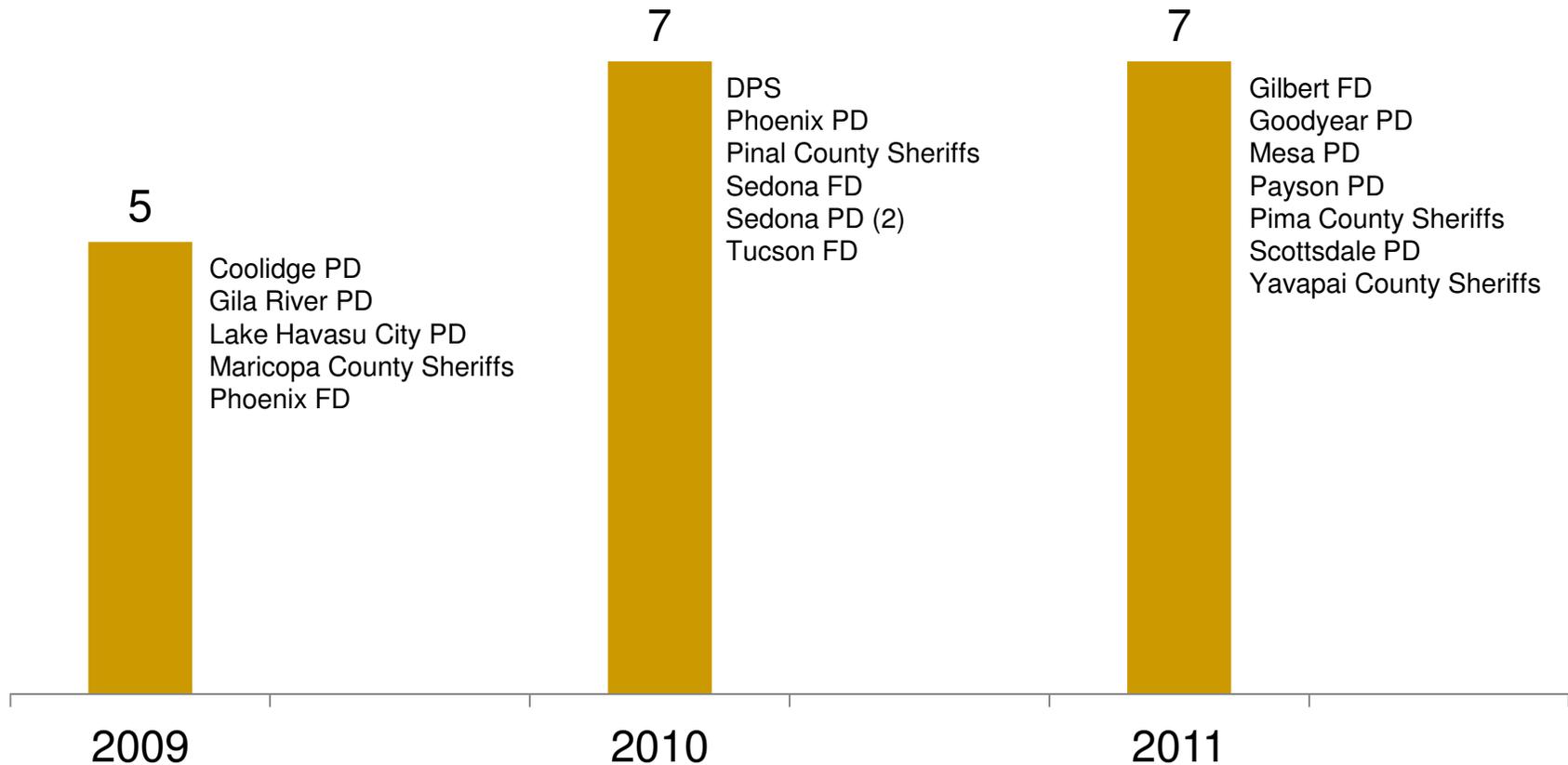


## CORP Pension Distribution by Dollars (in millions)

■ Normal (includes survivors) ■ Disability

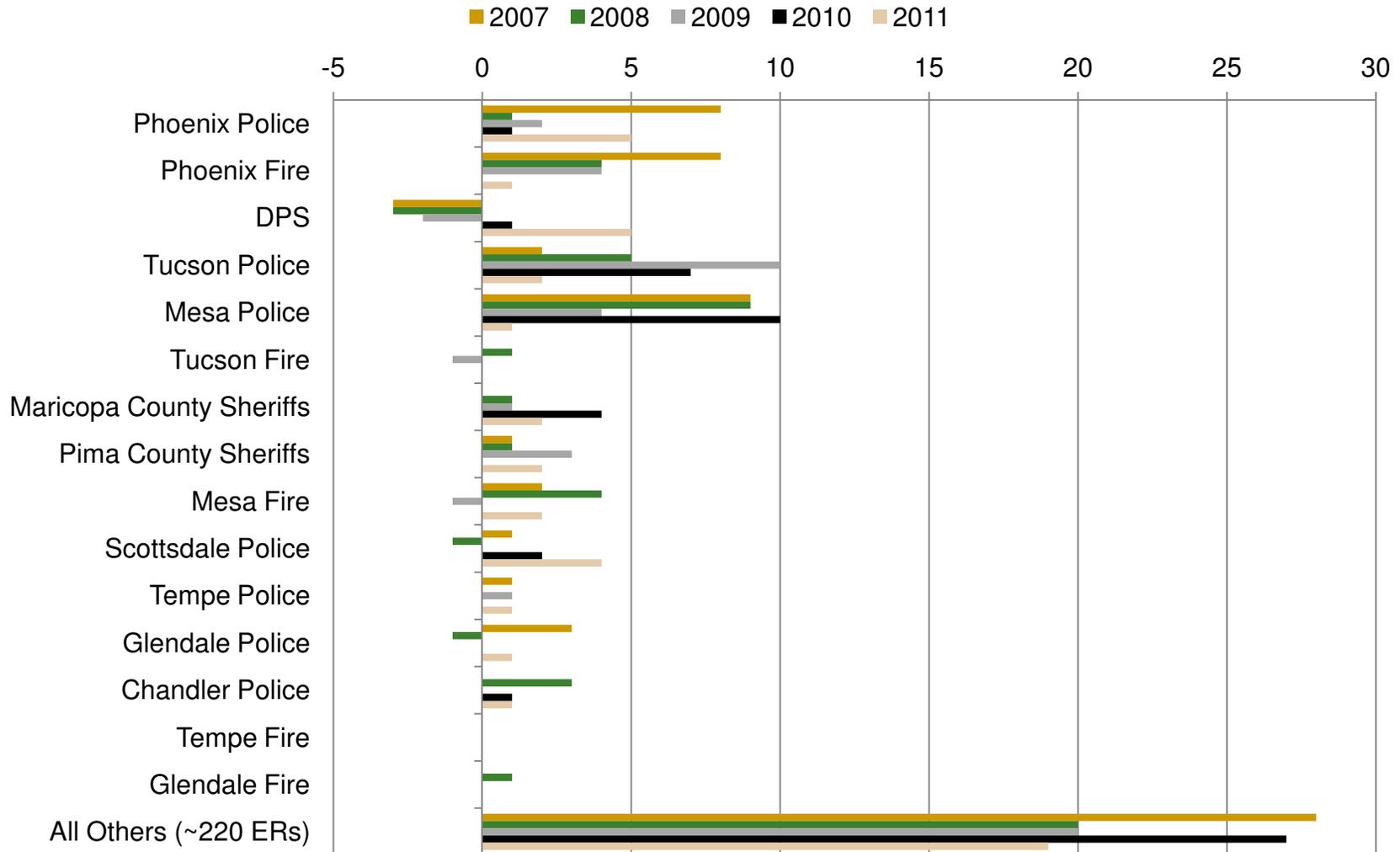


# Disabilities Denied by Local Boards



This graph represents disabilities ultimately denied by various Local Boards based on a review of their minutes submitted to the PSPRS Administrative Office. The practice of logging these denials was not in place prior to 2009. It should also be noted that very few, if any, disabilities granted by the Local Boards are denied by the Administrative Office. The more likely scenario is that the information provided to our office is insufficient to support the Local Board decision and is therefore returned for clarification that must be addressed in their meeting and minutes.

# 5-Year Disability Claims by PSPRS Top 15



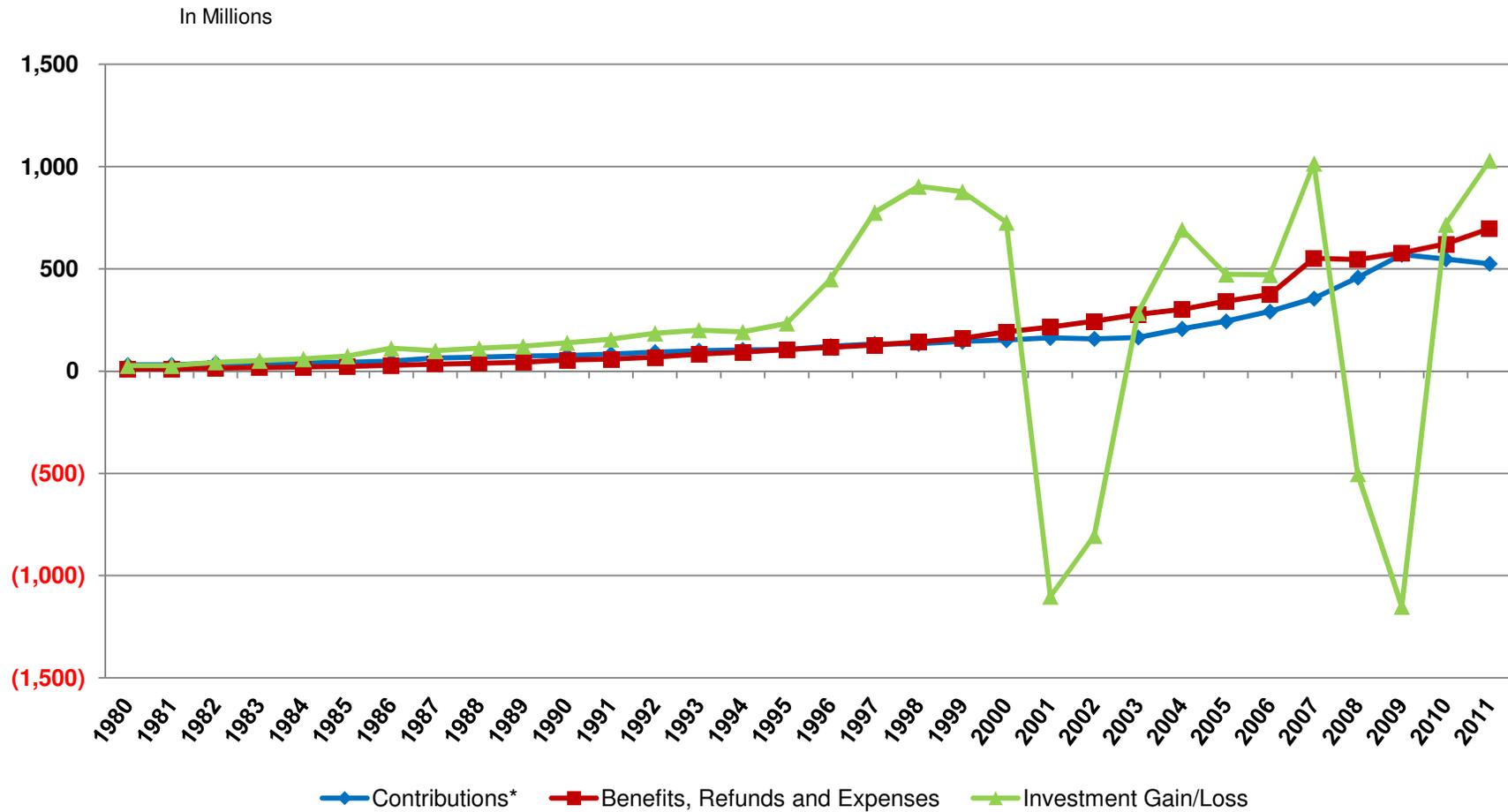
This graph represents the change in disabilities from year-to-year to represent the annual claims granted by each respective Local Board. A negative claim, as indicated above, can represent either a member coming off temporary disability or a disability no longer being paid due to death.

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# Contributions, Expenses, & Investment Earnings (Losses)

# TOTAL FUND

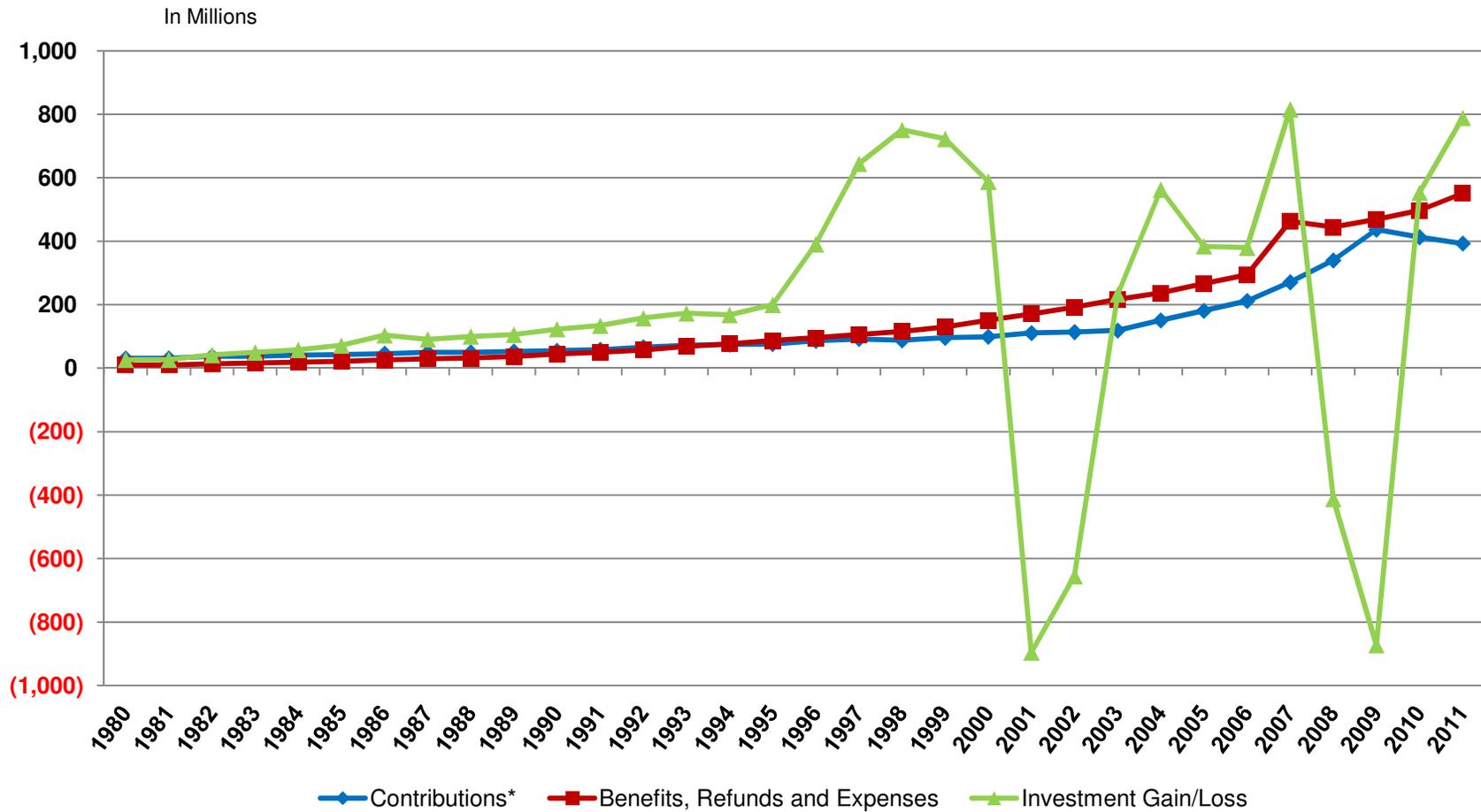
## Contributions vs. Benefits, Refunds, & Expenses vs. Investment Earnings (Losses)



*\*Includes employee contributions, employer contributions and service purchases*

# PSPRS

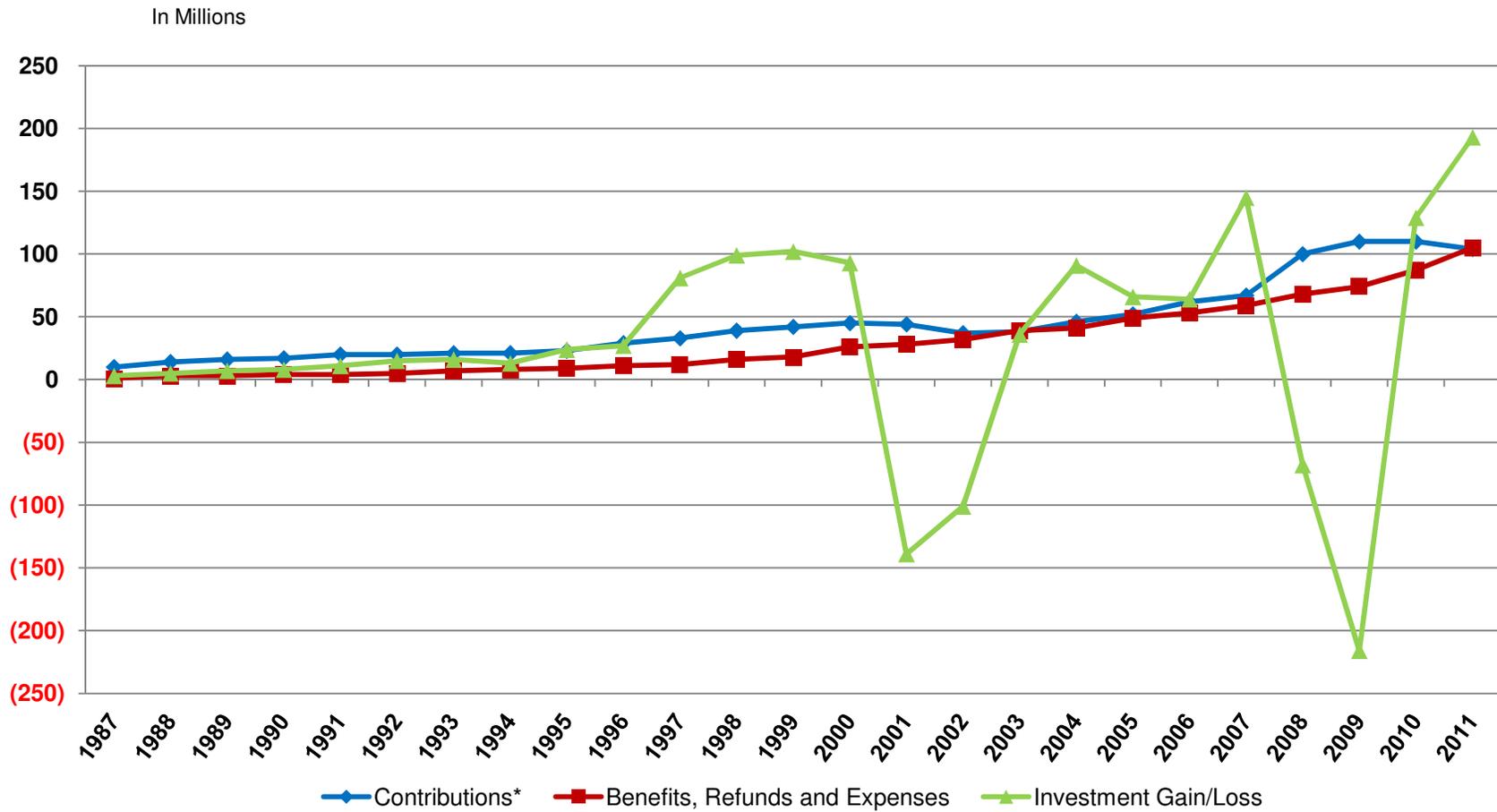
## Contributions vs. Benefits, Refunds, & Expenses vs. Investment Earnings (Losses)



*\*Includes employee contributions, employer contributions and service purchases*

# CORP

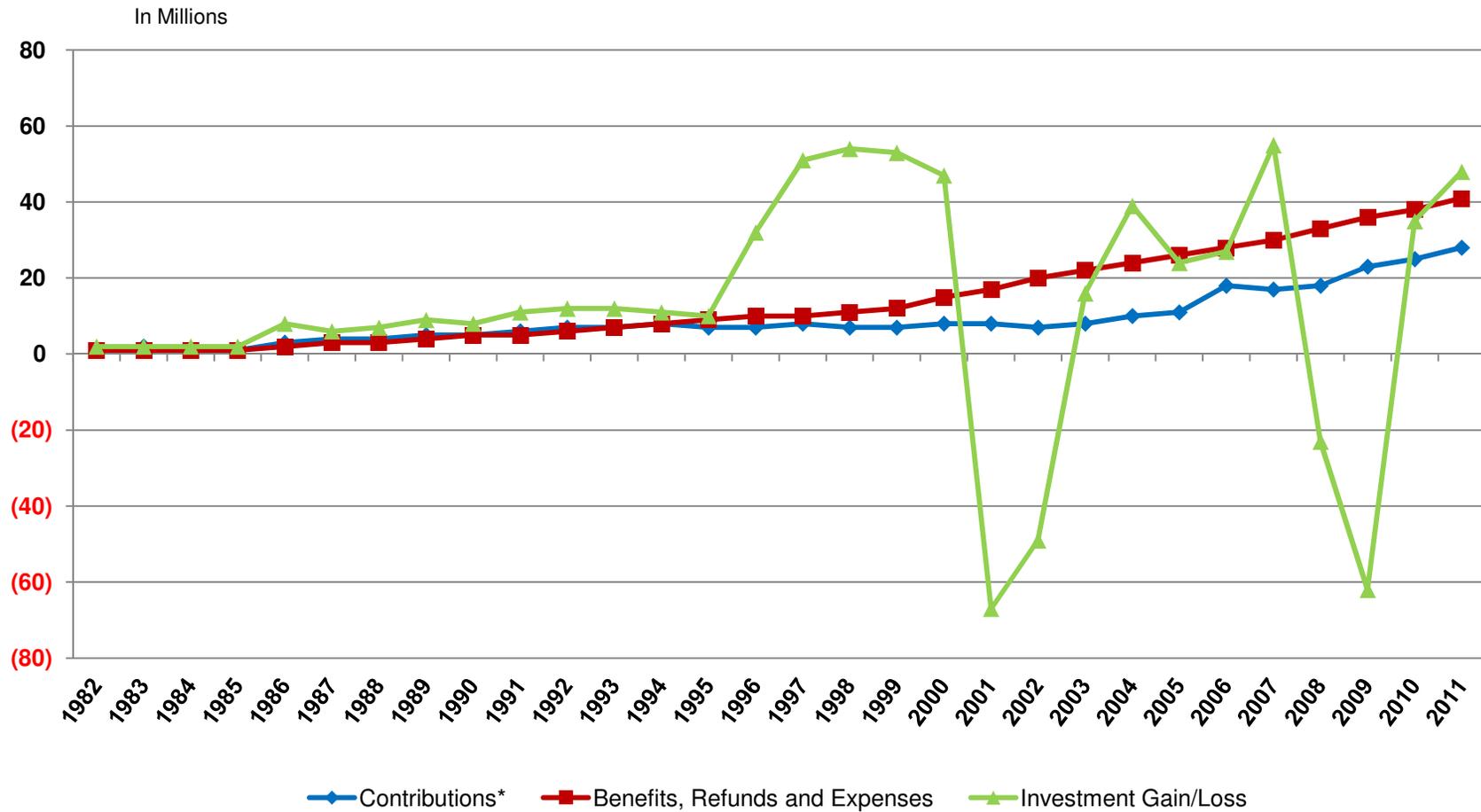
## Contributions vs. Benefits, Refunds, & Expenses vs. Investment Earnings (Losses)



*\*Includes employee contributions, employer contributions and service purchases*

# EORP

## Contributions vs. Benefits, Refunds, & Expenses vs. Investment Earnings (Losses)



*\*Includes employee contributions, employer contributions and service purchases*

# Time Series of Investment Returns



This graph represents the total investment returns as of June 30 for PSPRS. Returns for EORP (beginning in 1982) and CORP (beginning in 1987) are very similar as to overlap the above. Beginning in 2009, legislative changes allowed all three funds to be invested on a unitized basis, thereby allowing their returns to be identical. Returns are annualized for periods greater than 1 year.

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## Projected Contribution Rates & Funding Levels

# PROJECTED CONTRIBUTION RATES

(Represents the probability that contributions will be at most this percent of payroll – based on June 30, 2010 valuation results)

	PSPRS		CORP		EORP	
Valuation Date	50% Probability	75% Probability	50% Probability	75% Probability	50% Probability	75% Probability
2010	21.3%	21.3%	8.3%	8.3%	31.2%	31.2%
2015	32.6%	33.7%	12.4%	13.0%	44.4%	45.8%
2020	31.8%	35.4%	12.0%	14.0%	41.4%	45.8%
2025	30.0%	36.4%	11.8%	15.2%	39.8%	45.7%
2030	22.4%	30.9%	9.1%	13.3%	32.2%	38.9%
2035	16.2%	26.0%	6.9%	11.6%	24.6%	33.9%
2040	11.8%	22.3%	6.0%	10.2%	17.5%	30.5%
2045	9.1%	20.0%	6.0%	9.3%	13.7%	27.9%
2050	8.0%	19.8%	6.0%	9.0%	10.0%	27.6%

# PROJECTED FUNDING LEVELS

(Represents the probability that the funded ratio will be at least this percent – based on June 30, 2010 valuation results)

	PSPRS		CORP		EORP	
Valuation Date	50% Probability	75% Probability	50% Probability	75% Probability	50% Probability	75% Probability
2010	67.7%	67.7%	83.8%	83.8%	68.2%	68.2%
2015	59.0%	56.5%	66.2%	63.5%	51.7%	49.3%
2020	68.6%	61.7%	73.1%	66.0%	58.6%	51.1%
2025	77.9%	69.3%	79.9%	71.0%	67.6%	59.2%
2030	86.0%	76.6%	86.4%	76.7%	78.2%	70.0%
2035	91.1%	81.7%	91.0%	80.9%	86.2%	77.7%
2040	95.6%	85.0%	96.8%	84.7%	92.3%	82.6%
2045	98.6%	88.2%	102.6%	87.8%	95.7%	86.1%
2050	102.0%	89.2%	108.0%	89.5%	100.6%	88.0%