

# **Facilities Development Division**

## **California's Building Department for Hospitals**

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## ***Seismic Compliance Update***

*for the Hospital Building Safety Board*  
*May 6, 2015*

# Preliminary 2014 SB 499 Reports Summary

This preliminary summary is based on data reported by the hospitals to OSHPD as required by the SB 499 reports due on November 1, 2014. The information and data used to generate this summary are subject to change without notice.

Compliance Timeline	Number of Hospitals	Number of SPC-1 Buildings
By January 1, 2015	26	82
Between January 1, 2015 to January 1, 2016	21	50
Between January 1, 2016 to January 1, 2018	24	55
Between January 1, 2018 to January 1, 2020	59	150

- The compliance timeline for SPC-1 buildings is self-reported by the hospitals and does not automatically make a hospital eligible for an extension to the compliance date reported.
- To be eligible for an extension, a hospital must meet the initial eligibility criteria and maintain its eligibility by complying with subsequent milestones and requirements.

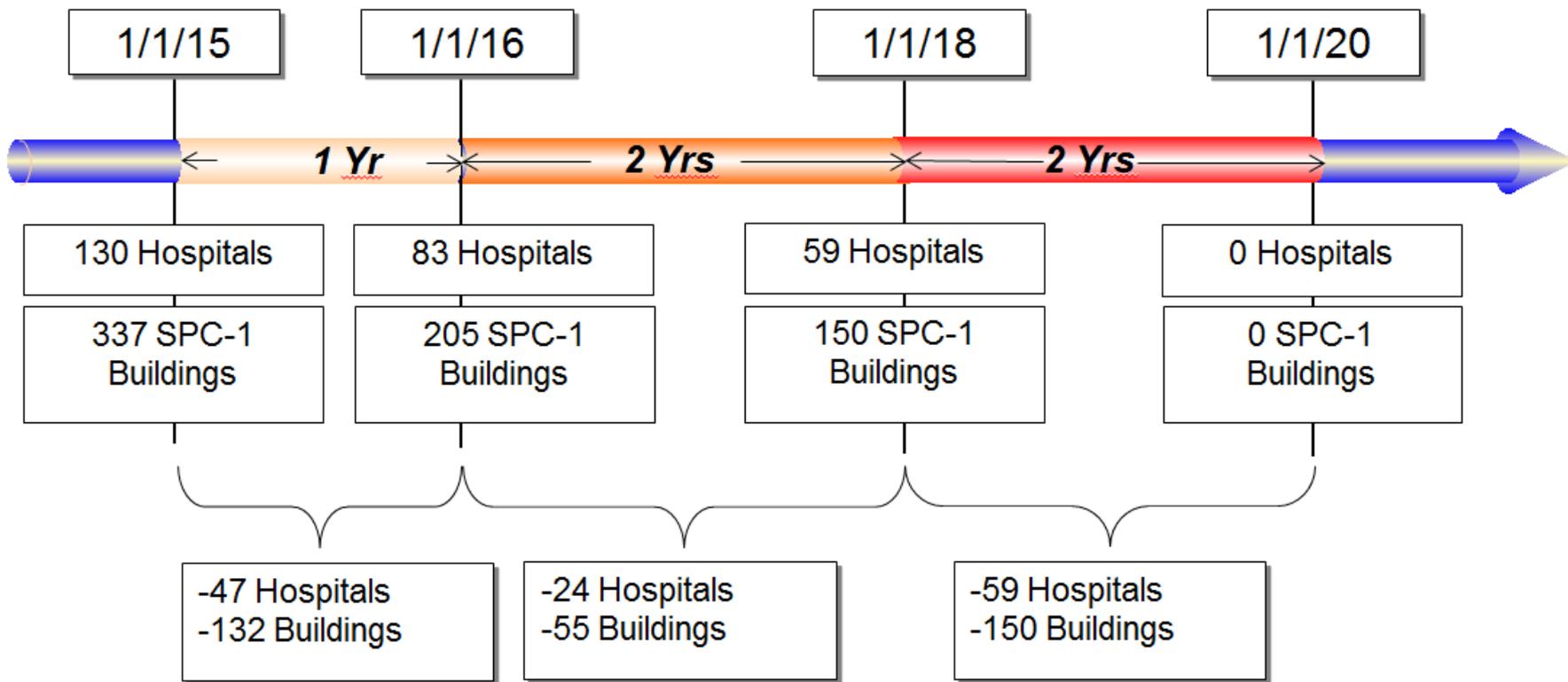
# SPC-1 Building extensions as of 1/15/2015

Extension Type	SB 90	SB 1661	SB 499	SB 306	SB 608
SB 90	225	9	0	5	0
SB 1661		54	0	0	0
SB 499			6	0	0
SB 306				39	0
SB 608					1
<b>Facilities</b>	103	14	5	8	1

Total SPC-1 Buildings = 337  
 Active SPC-1 building extensions beyond 2013 = 311  
 SPC-1 Buildings without Extensions = 26 (12 Fac.)

Hospitals with SPC-1 Buildings = 130  
 Hospitals with SPC-1 Building(s) and no ext. = 5

# Seismic Compliance for SPC-1 Buildings



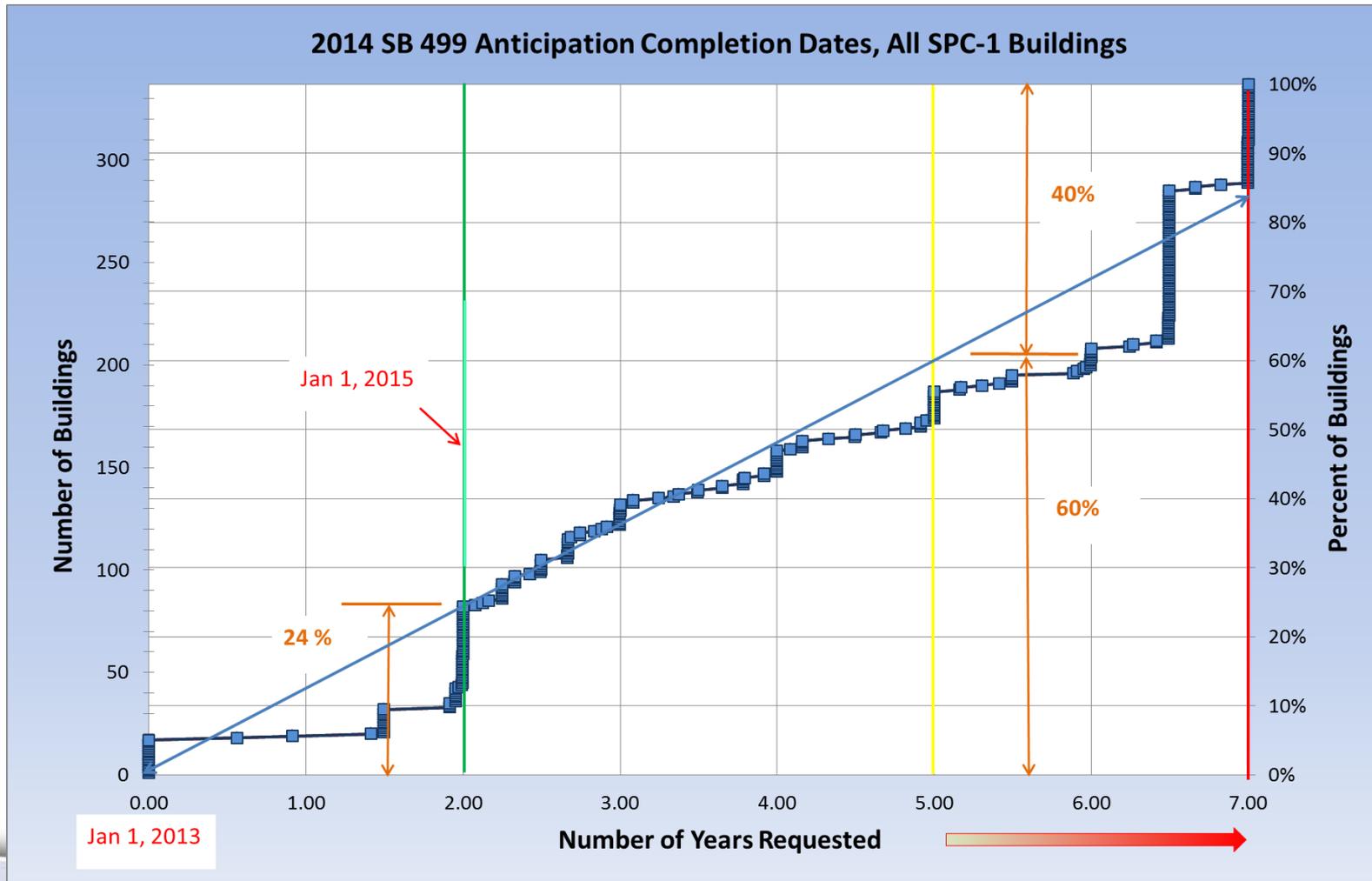
**As Self-Reported – SB499-2014 Report**

# 2014 SB 499 Anticipation Completion Dates

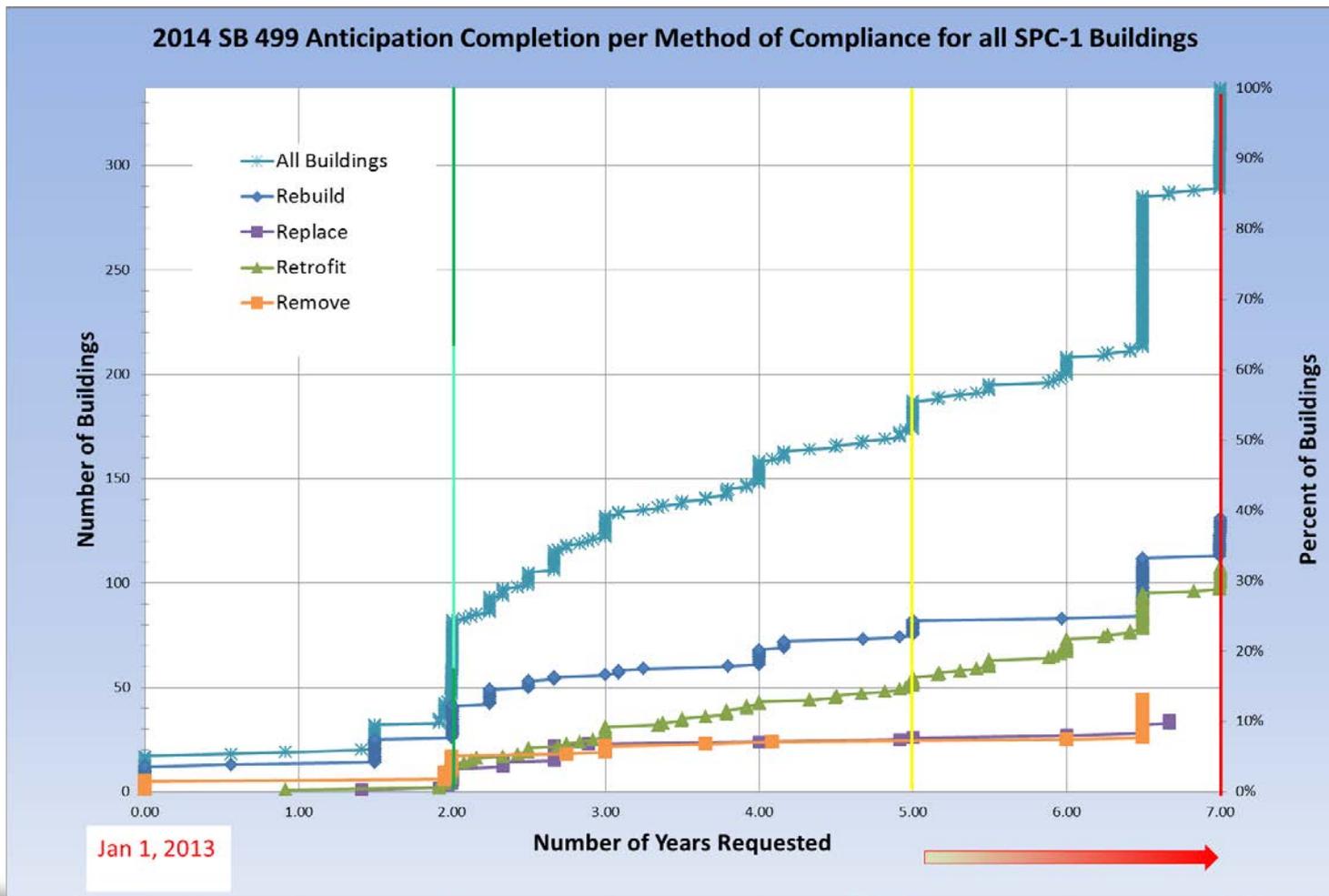
SB 499 report Method of Compliance	No. of SPC-1 Buildings, (All Buildings)				
	SB 499 Anticipated Completion Dates				
	2015	2016	2018	2020	Total
Rebuild	41	15	26	49	131
Replace	11	12	3	14	40
Retrofit	13	18	24	53	108
Remove	17	5	2	34	58
<b>Total</b>	<b>82</b>	<b>50</b>	<b>55</b>	<b>150</b>	<b>337</b>

SB 499 report Method of Compliance	Facilities w/SPC-1 Buildings (All Buildings)				
	SB 499 Anticipated Completion Dates				
	2015	2016	2018	2020	Total
Rebuild	10	3	10	20	43
Replace	6	3	3	10	22
Retrofit	9	15	16	30	70
Remove	10	3	2	10	25
<b>Total</b>	<b>35</b>	<b>24</b>	<b>31</b>	<b>70</b>	<b>160</b>

# 2014 SB 499 Anticipation Completion Dates



# 2014 SB 499 Anticipation Completion per Method of Compliance



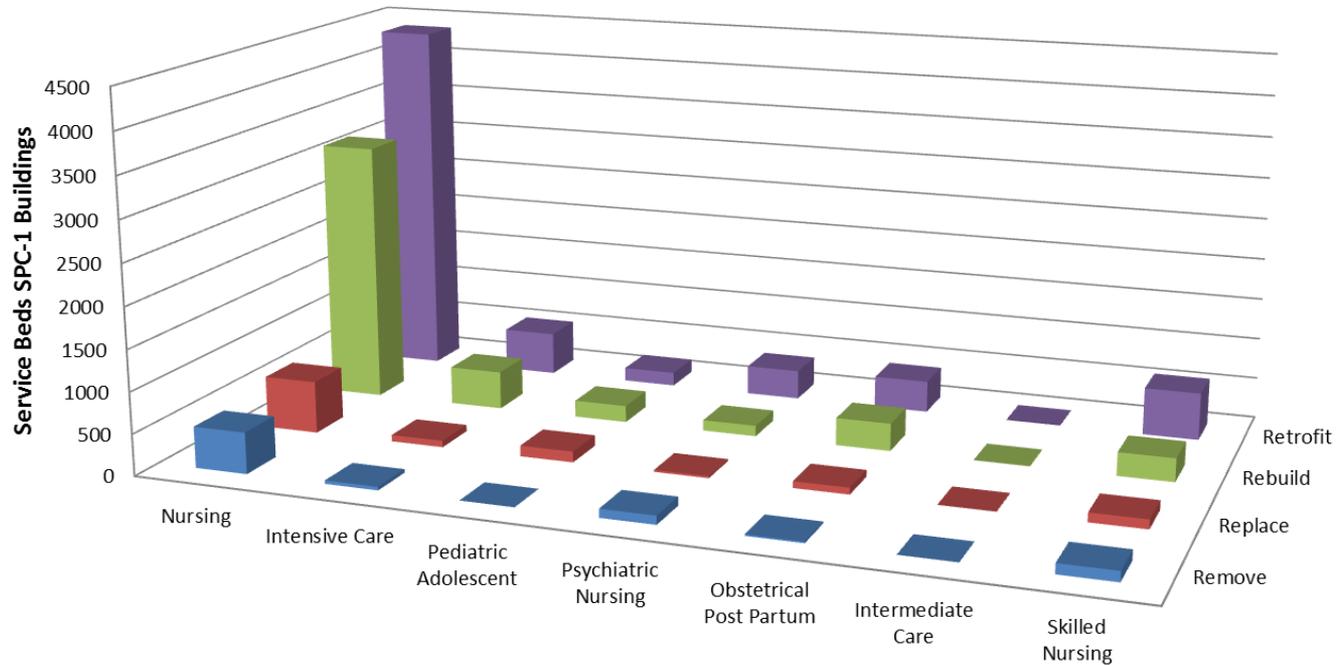
# Service Beds in SPC-1 Buildings

SB 499 report Method of Compliance	Service Beds, SPC-1 Buildings							Total
	Nursing	Intensive Care	Pediatric Adolescent	Psychiatric Nursing	Obstetrical Post Partum	Intermediate Care	Skilled Nursing	
Rebuild	3167	464	203	130	336	0	285	<b>4585</b>
Replace	633	79	131	22	81	0	114	<b>1060</b>
Retrofit	4356	524	166	356	385	0	577	<b>6364</b>
Remove	499	42	0	106	19	0	124	<b>790</b>
<b>Total</b>	<b>8655</b>	<b>1109</b>	<b>500</b>	<b>614</b>	<b>821</b>	<b>0</b>	<b>1100</b>	<b>12799</b>
% Beds	<b>44.5%</b>	<b>24.6%</b>	<b>31.3%</b>	<b>52.0%</b>	<b>36.5%</b>	<b>0.0%</b>	<b>61.8%</b>	<b>41.2%</b>

SB 499 report, Compliance Timeline	Service Beds, SPC-1 Buildings							Total
	Nursing	Intensive Care	Pediatric Adolescent	Psychiatric Nursing	Obstetrical Post Partum	Intermediate Care	Skilled Nursing	
<= 2 yrs	1305	187	96	111	156	0	184	<b>2039</b>
2 - 5 yrs	2345	277	105	84	223	0	328	<b>3362</b>
5 - 7 yrs	5005	645	299	419	442	0	588	<b>7398</b>
<b>Total</b>	<b>8655</b>	<b>1109</b>	<b>500</b>	<b>614</b>	<b>821</b>	<b>0</b>	<b>1100</b>	<b>12799</b>

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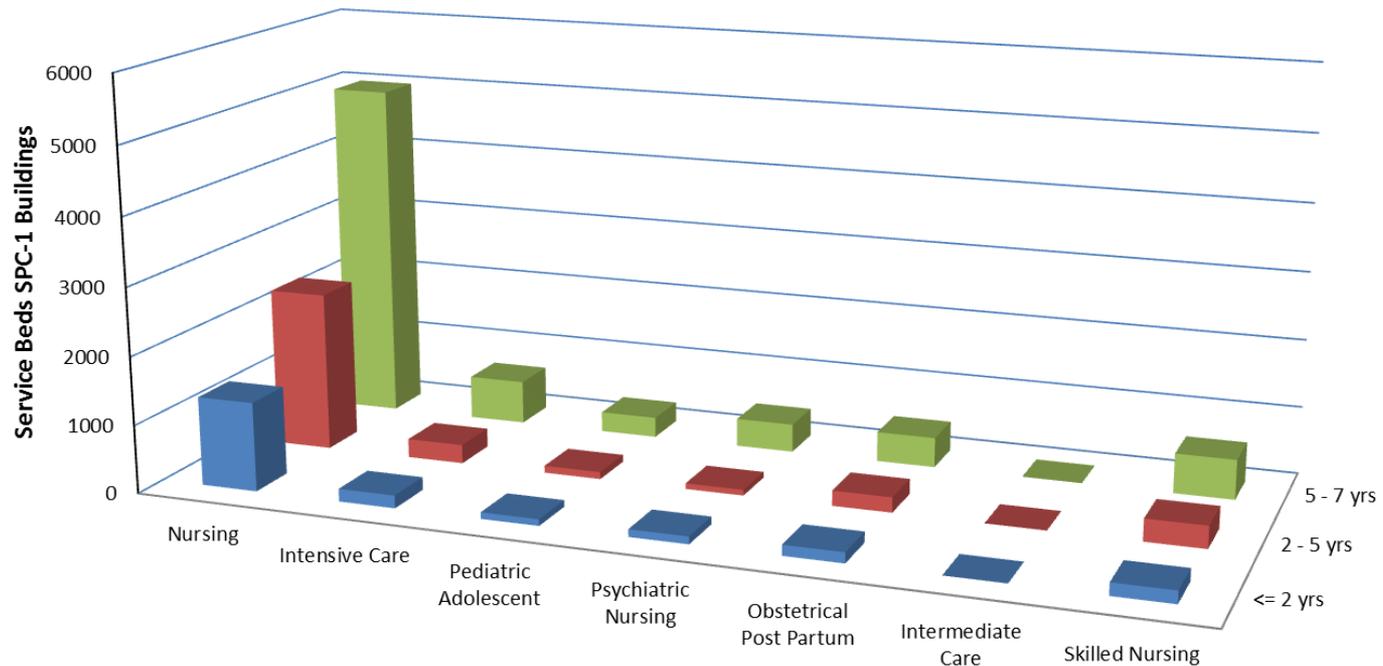
SB 499 Report, Method of Compliance



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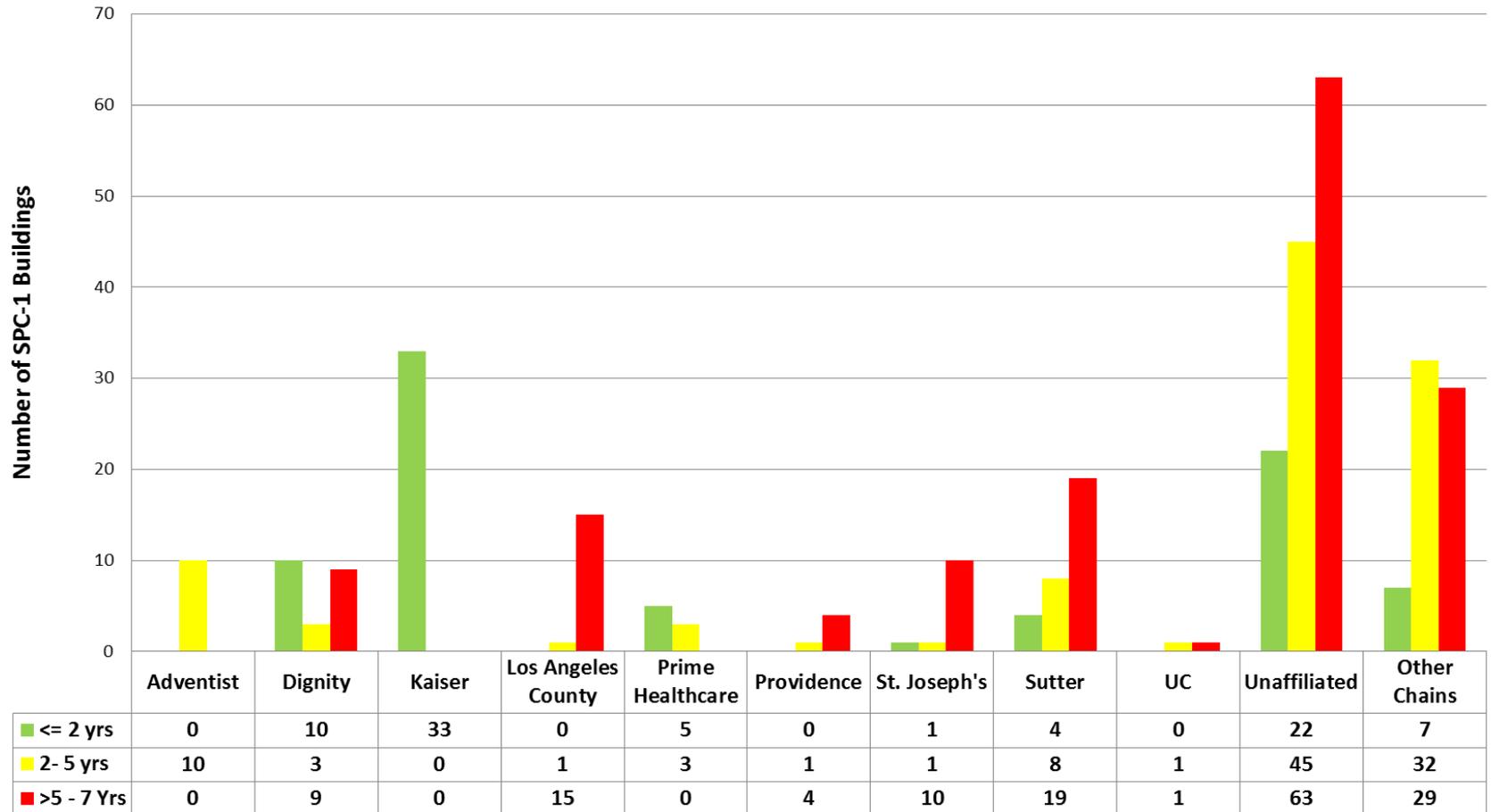
SB 499 Report, Compliance Timeline



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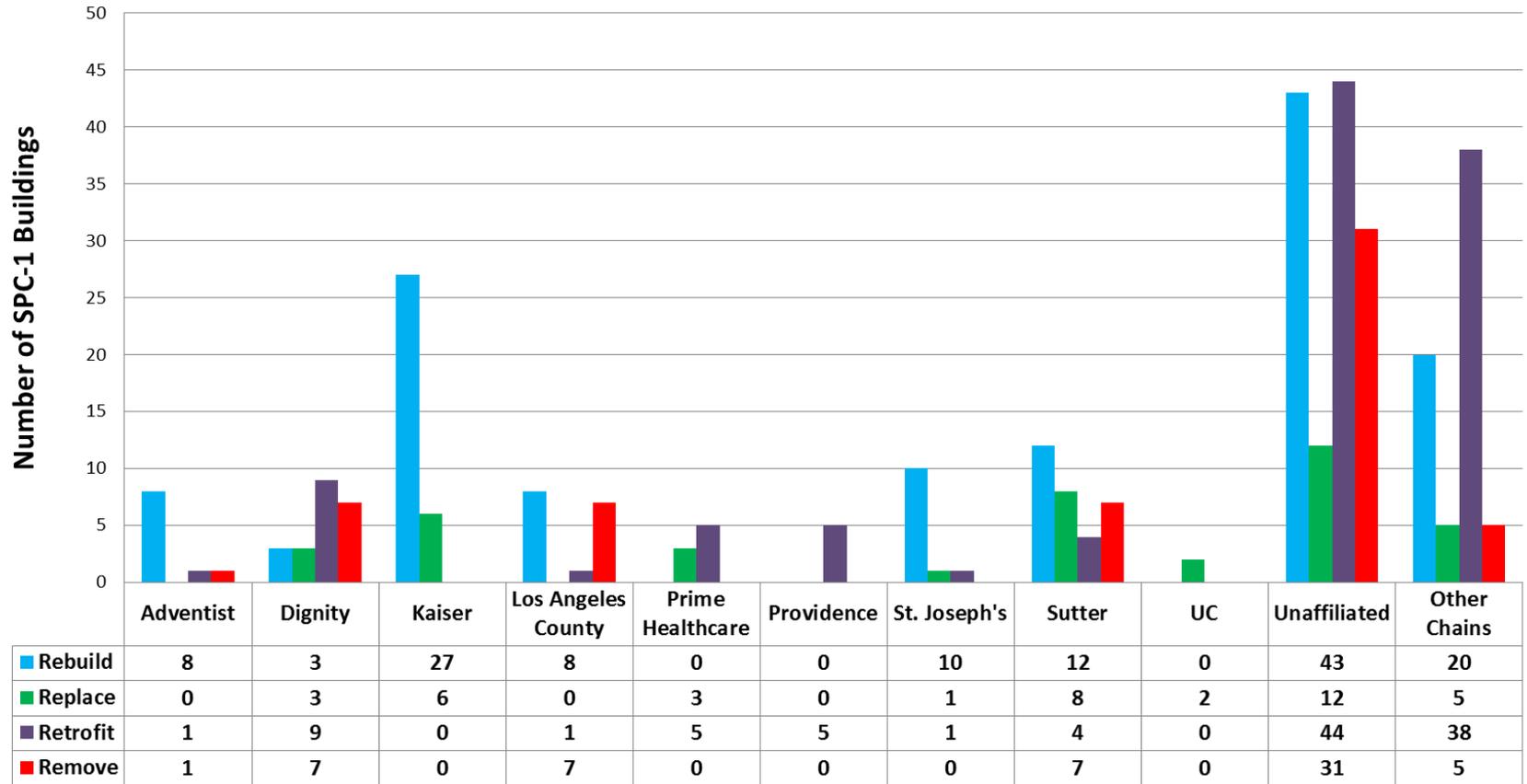
# 2014 SB 499 Anticipation Compliance per Chain

Anticipated Compliance by in years, per Hospital Chain

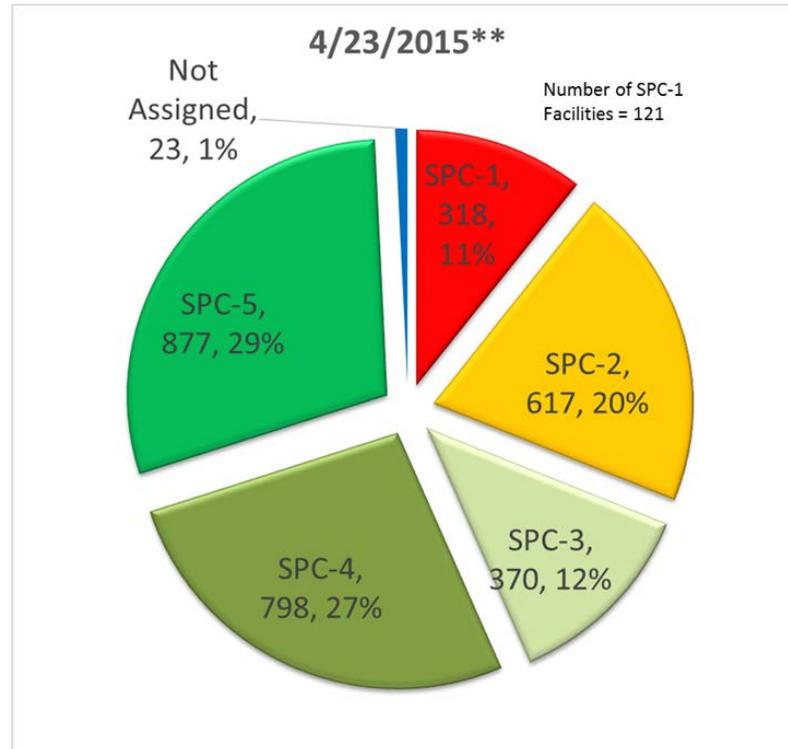


# Compliance Method per Chain

## Compliance Method per Chain



# SPC Rating of GAC Hospital Buildings

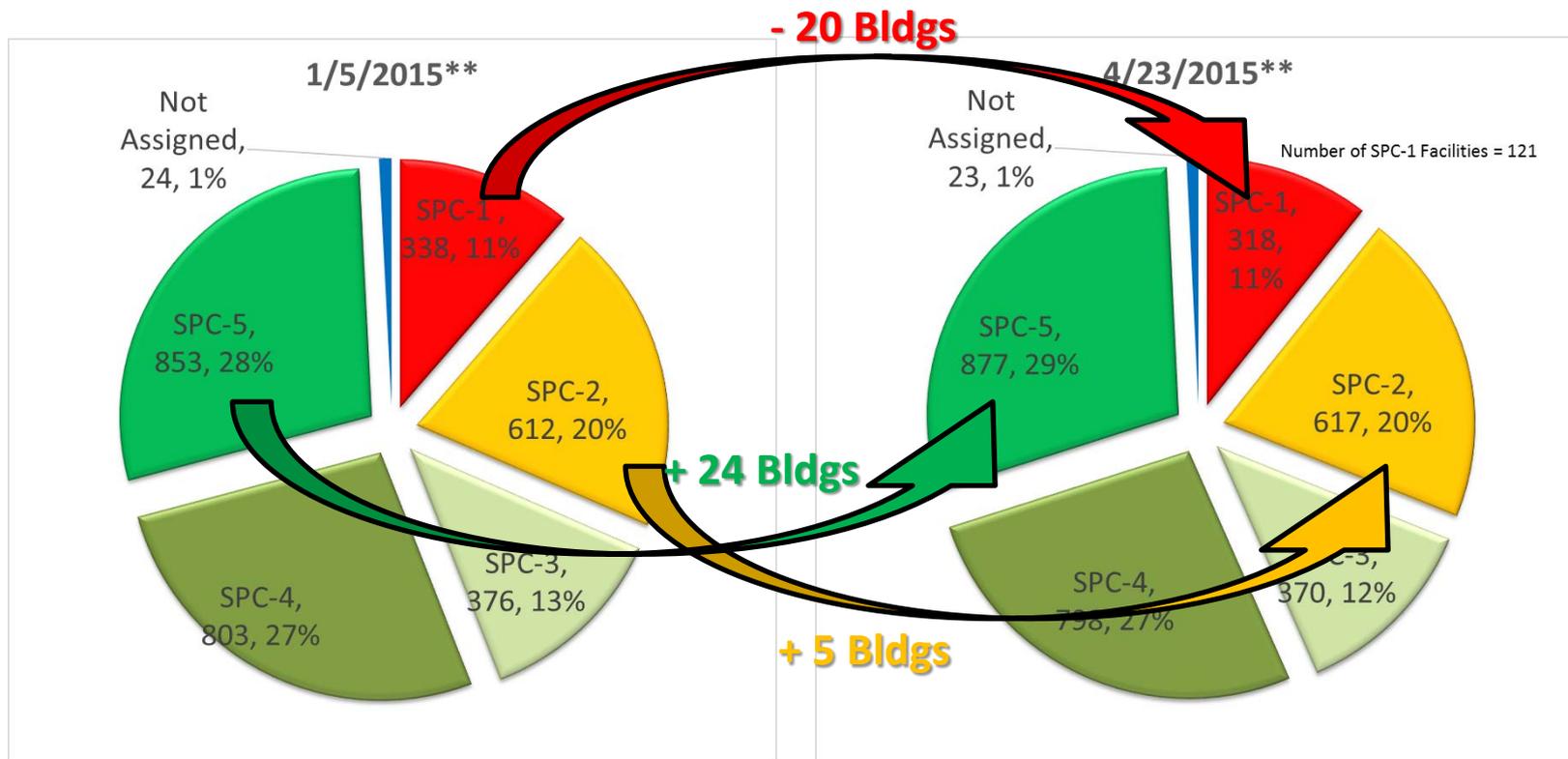


Total Acute Care Building Count = 3010

SPC-1/SPC-2 Buildings = 935

\*\* SPC-5 includes buildings currently under construction

# Structure Performance Categories 4/23/2015



\*\* SPC-5 includes buildings currently under construction

# SPC -1 Buildings = 318

SPC-1 Buildings with Approved SB 90 Extensions	215
SPC-1 Buildings with only SB 1661/AB2557 Extensions	39
SPC-1 Buildings with only SB 306 Extensions	34
SPC-1 Buildings with only SB 499 Extensions	4
SPC-1 Buildings with only SB 608 Extensions	1
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SPC-1 Buildings that currently have an extension	293
SPC-1 Buildings that do not have any extension	25
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Total	318

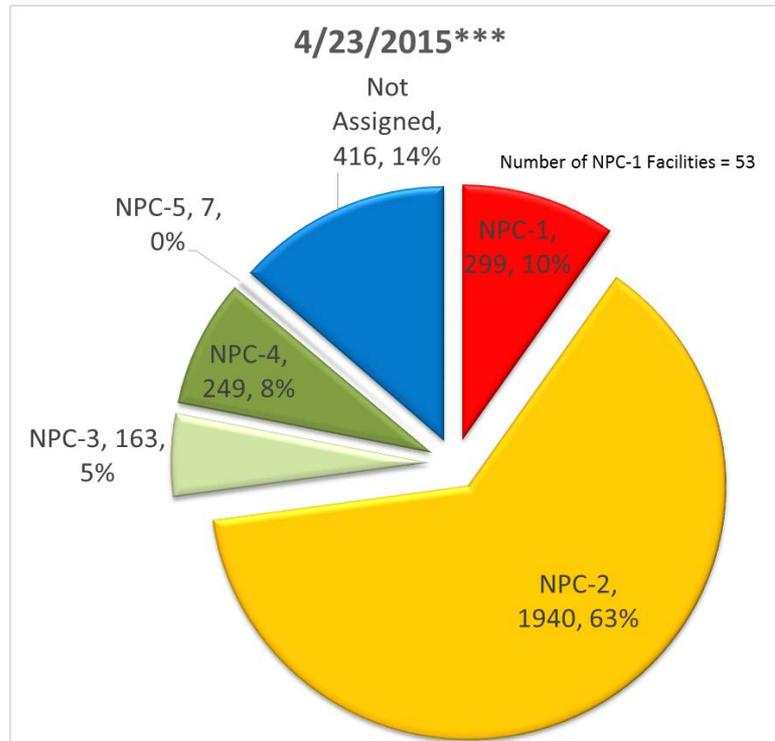
# SPC-1 Buildings with Extensions = 293

SPC-1 Buildings with expired SB 90 Extensions	17
SPC-1 Buildings with expired SB 1661 Extensions	23
SPC-1 Buildings with expired SB 499 Extensions	4
	-----
SPC-1 Buildings that have expired extensions	44
SPC-1 Buildings that have occupancy/construction final	- 28
Buildings that have been sent non-compliance notice	- 8
	-----
Remaining	8

# Extension Communications

- Issued letter of non-compliance to a facility for 8 buildings .
- Emails sent for 26 buildings where SB 90 resolution was different from 2014 SB 499 report. Responses received for 24.
- Letters to facilities that have missed major milestones in their SB 90 schedules – under preparation.

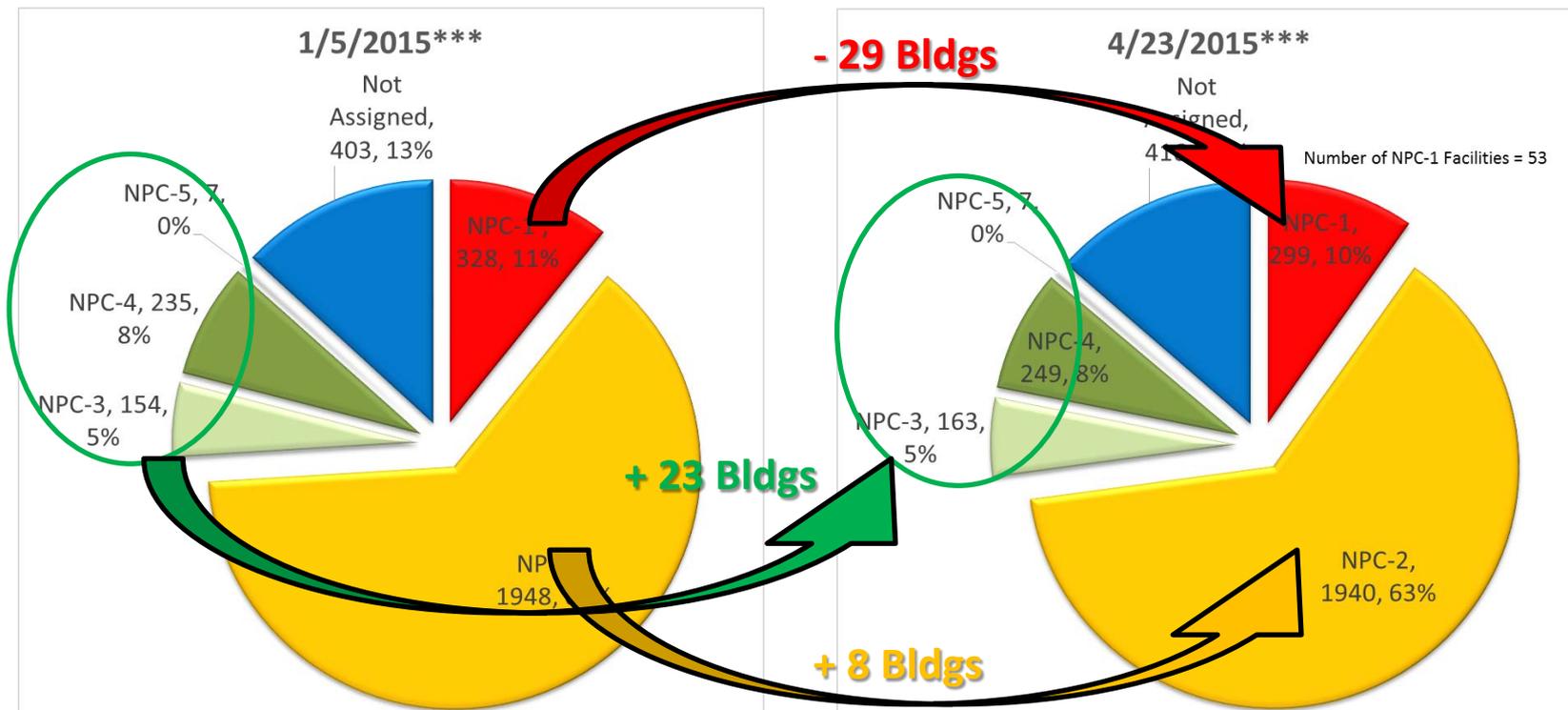
# Current NPC Rating of GAC Hospital Buildings



\*\*\*Includes buildings under construction, tunnels and equipment yards

For NPC - "Not Assigned" are for buildings and nonbuilding structures either under construction or where the nonstructural performance category has not been verified

# Nonstructural Performance Categories 2015

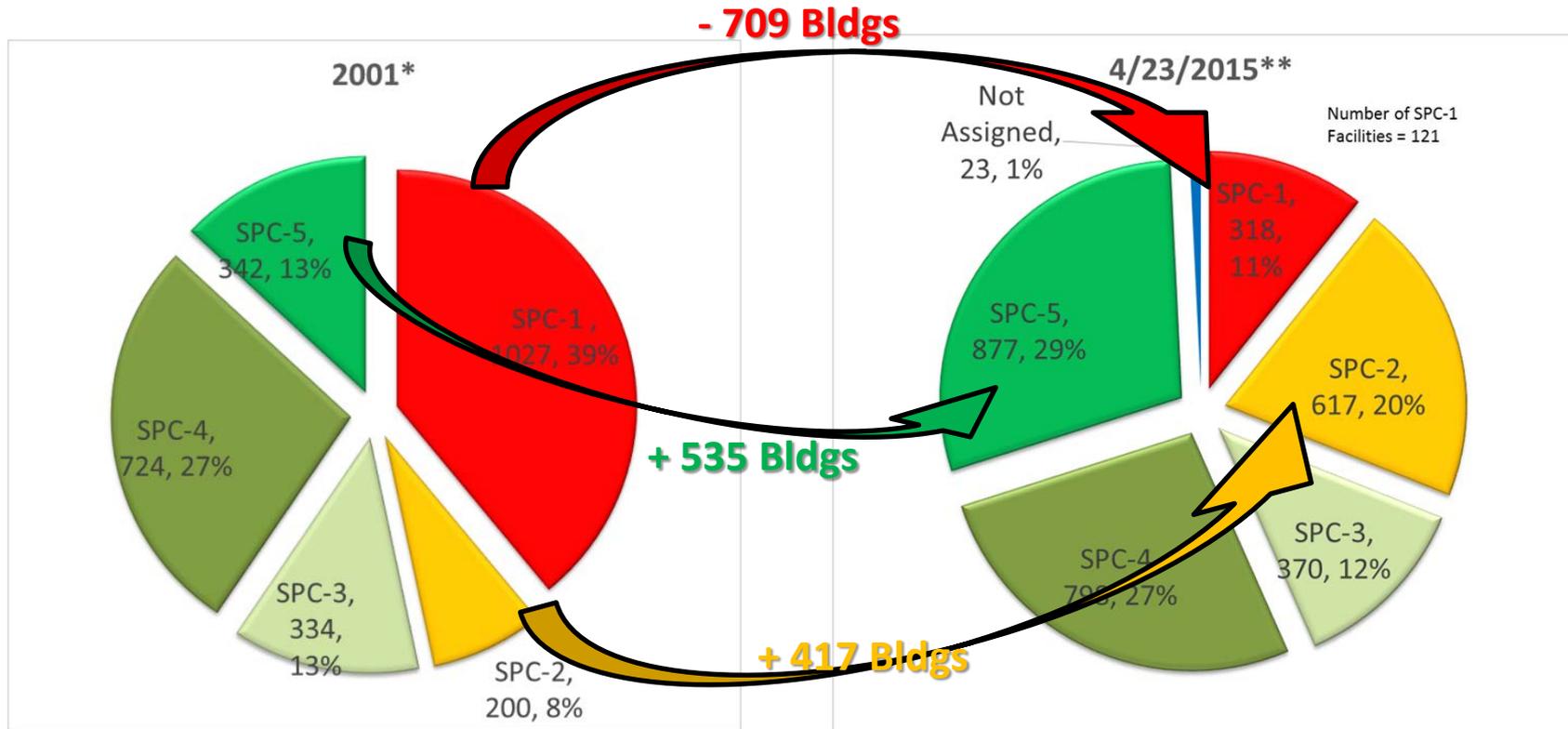


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# Nonstructural Performance Categories

- NPC-1 Facilities = 53 (299 buildings)
- 7 letters issued to licensing for facilities that have not resolved NPC-1, do not have replacement buildings under construction and do not have reconciliation projects with the Seismic Compliance Unit – Some facilities have contacted SCU for submitting reconciliation reports.
- Letters issued to facilities that have SB 499 Item 7 extensions reminding them of 1/1/2016 deadline to obtain permit for NPC 4 or NPC 5 compliance.

# Progress in Seismic Compliance since 2001



\* Based on 2001 Hospital Survey Results based on hospital “self-report” and then “state-of-the-art” FEMA 178 standards from 1996

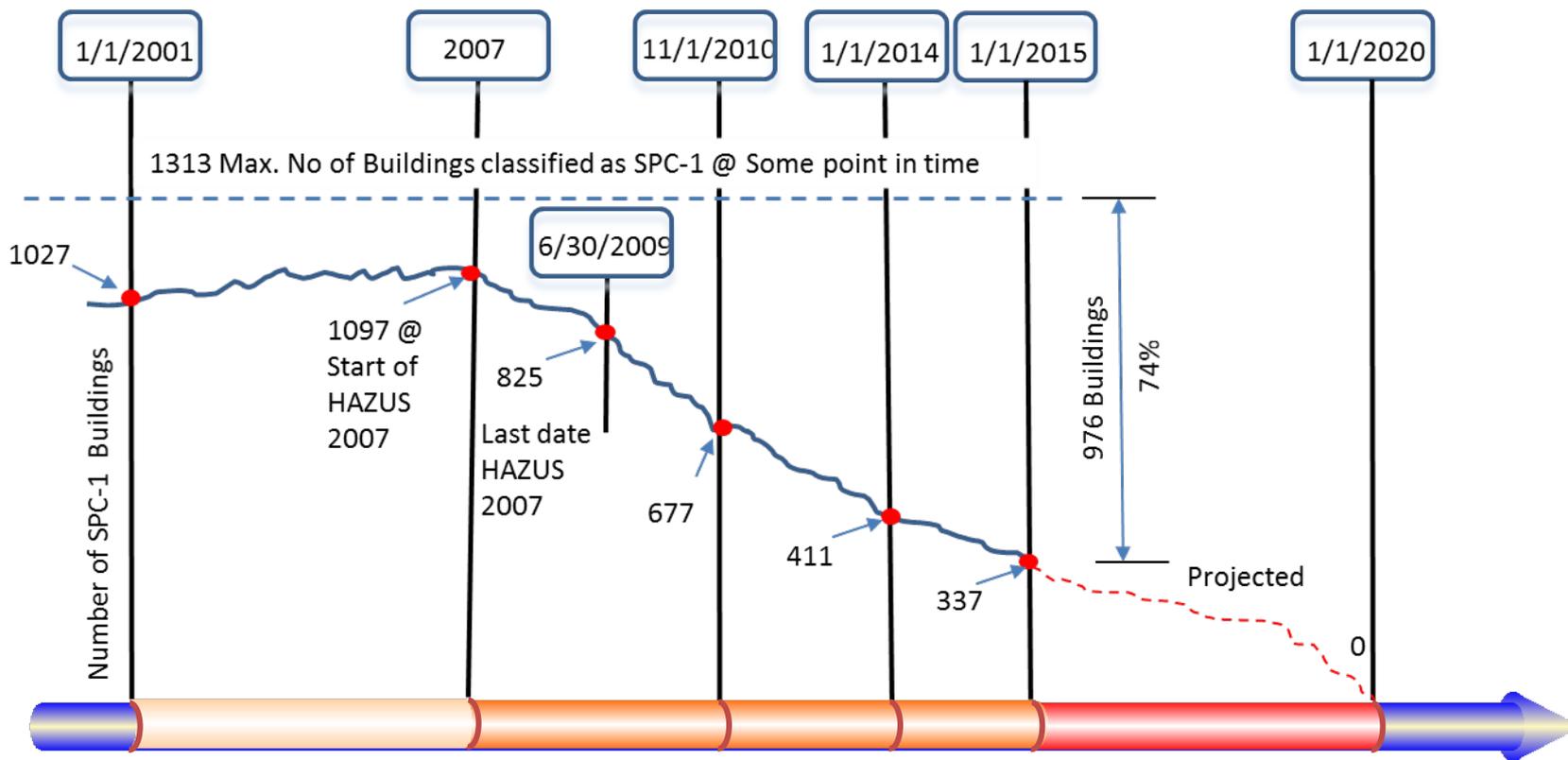
\*\* SPC-5 includes buildings currently under construction

# Seismic Ratings and Extension Request

The seismic performance ratings and extension requests for each general acute care hospital building is updated regularly and posted on the OSHPD Website

- [http://oshpd.ca.gov/FDD/seismic\\_compliance/SB1953/SPCNPCList.pdf](http://oshpd.ca.gov/FDD/seismic_compliance/SB1953/SPCNPCList.pdf)
- [http://oshpd.ca.gov/FDD/seismic\\_compliance/SB1953/ExtensionRequests.pdf](http://oshpd.ca.gov/FDD/seismic_compliance/SB1953/ExtensionRequests.pdf)

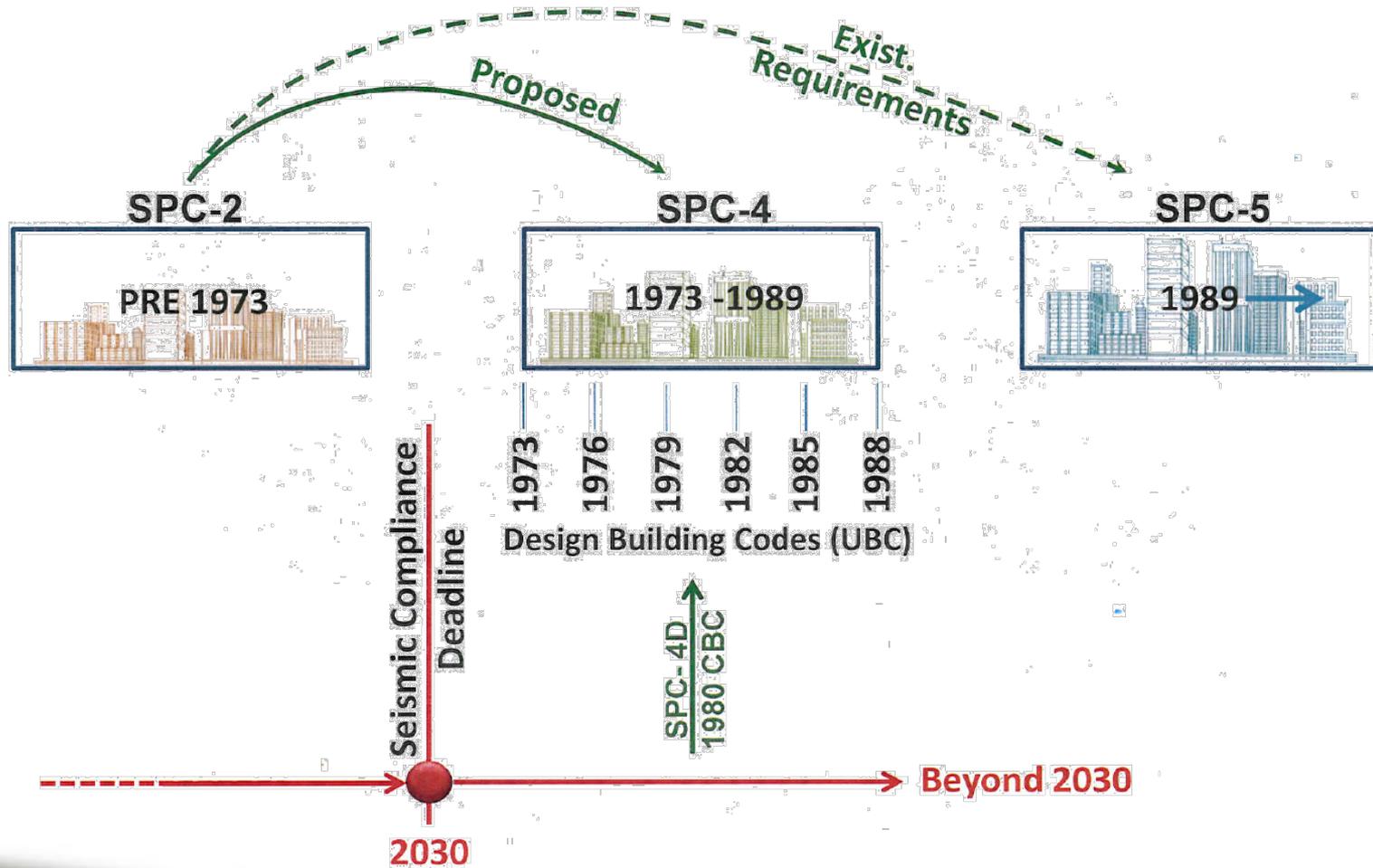
# Historical Changes to SPC-1 Building Inventory



# Concerns for 2030 Compliance

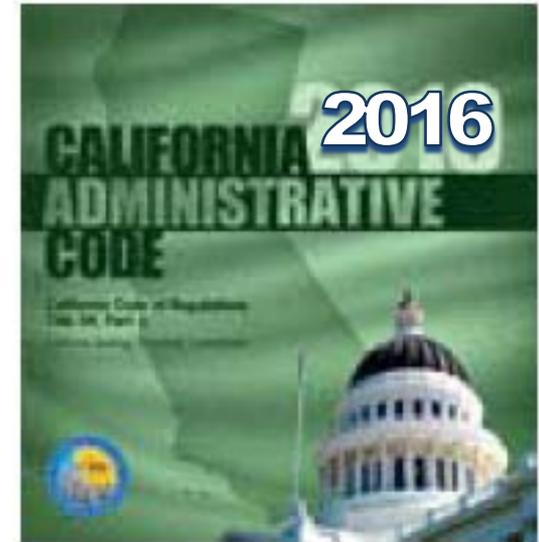
- Rural and other hospitals in underserved areas have limited resources to upgrade to current code
- The SPC-2 buildings may be landlocked by higher SPC buildings such that removing the SPC-2 building from service could make the hospital inoperable
- The hospital may not have property on which to build a replacement building
- Hospitals could use this option to strategize their master plan and explore various cost effective options
- Upgrade to comparable SPC-4 buildings instead of current code?
- Model codes have changed making upgrading to current code very costly
- Minimizing upgrade reduces disruption to ongoing services

# Looking for Another Approach



# The SPC-4D Approach

- Introduce Structural Performance Category SPC-4D (Damage control for existing Risk Category IV Buildings)
- Nonconforming Buildings (Building originally built to pre-1973 Code) can be upgraded to SPC-4D (Instead of SPC-5) to provide service beyond 2030



# What Is SPC-4D?

***STRUCTURAL PERFORMANCE CATEGORY SPC-4D*** is a performance category assigned to existing nonconforming hospital buildings that have been demonstrated either by analysis or retrofit to be equivalent to the minimum prescriptive requirements of the 1979 Uniform Building Code (UBC 1979) including the California amendments, hereafter called the 1980 CBC, in accordance with the CBC 2016 Section 3412A.2.3.

# What Constitutes the 1980 CBC?

1. Uniform Building Code, 1979 (UBC 1979)
2. California Code of Regulations, Title 24- Building Standards, dated February 2, 1980
3. California Code of Regulations, Title 22 – Social Security, dated October 13, 1979
4. California Code of Regulations, Title 17 – Public Health, dated October 13, 1979

# Performance Expectation of SPC-4D Buildings

- May control damage to permit return to function similar to SPC-3 or 4 buildings but not as quickly as SPC-5 buildings
- Performance should be equivalent to existing SPC-3 and SPC-4 buildings

# Buildings Not Eligible for SPC-4D

1. Hospital buildings with the potential for surface fault rupture and surface displacement at the building site
2. Unreinforced masonry shear wall buildings
3. Precast concrete buildings

# Possible Compliance Issues Using CBC 1980

- (E) Bldg. detailing may not meet the prescriptive standard
- Buildings have structural irregularities prohibited in current code known to cause collapse
  - Extreme torsional irregularity
  - Extreme stiffness of soft story irregularity
  - Extreme weak story irregularity
- Irregular buildings and tall buildings require a dynamic analysis for distribution of forces
- Archaic Materials used in existing buildings do not have design values

# Alternate to CBC 1980

- Current Design Standard for Seismic Evaluation and Retrofit of Existing Buildings, ASCE 41-13
- Earthquake demand for existing buildings
  - Damage control for design earthquake
    - Basic Safety Earthquake BSE-1E
  - Collapse prevention for maximum considered earthquake
    - Basic Safety Earthquake BSE-2E

# Which option do I use? 1980 CBC or ASCE 41?

Owner's Choice considering factors such as feasibility, cost, etc.

## CBC 1980

- One or two story buildings
- Inadequate Wall anchorage
- Seismicity depends on the Seismic Zone Factor (not site specific)
- Building has adequate detailing
- Analysis is simpler
- . . . . .

\*Experienced Design Professional in Retrofit of (E) Bldgs

## ASCE 41\*

- Buildings with prohibited irregularities
- Tall buildings with irregularities
- Building has inadequate detailing
- Seismicity on site has changed
- Take advantage of existing material properties
- Variety of analysis options

# Why Now?

- To make compliance with SB 1953 program cost effective
- To ensure availability of Hospitals in rural and medically underserved areas
- Statute requires OSHPD to adopt model code and national standards. The International Existing Building Code, 2015 (IEBC 2015)/ASCE 41-13 adopted damage control structural performance level as a discrete performance category giving FDD the foundation upon which to move forward with a new seismic performance category
- With only 14+ years remaining until 2030, planning, financing, and building a replacement building would be difficult for many hospitals
- To provide hospitals with another option for seismic compliance so they may choose the approach that is most cost effective for them

# Questions?

