Adjust BUILDER Settings to Match Business Process

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Alpha™ Facilities Solutions
Building perspective.

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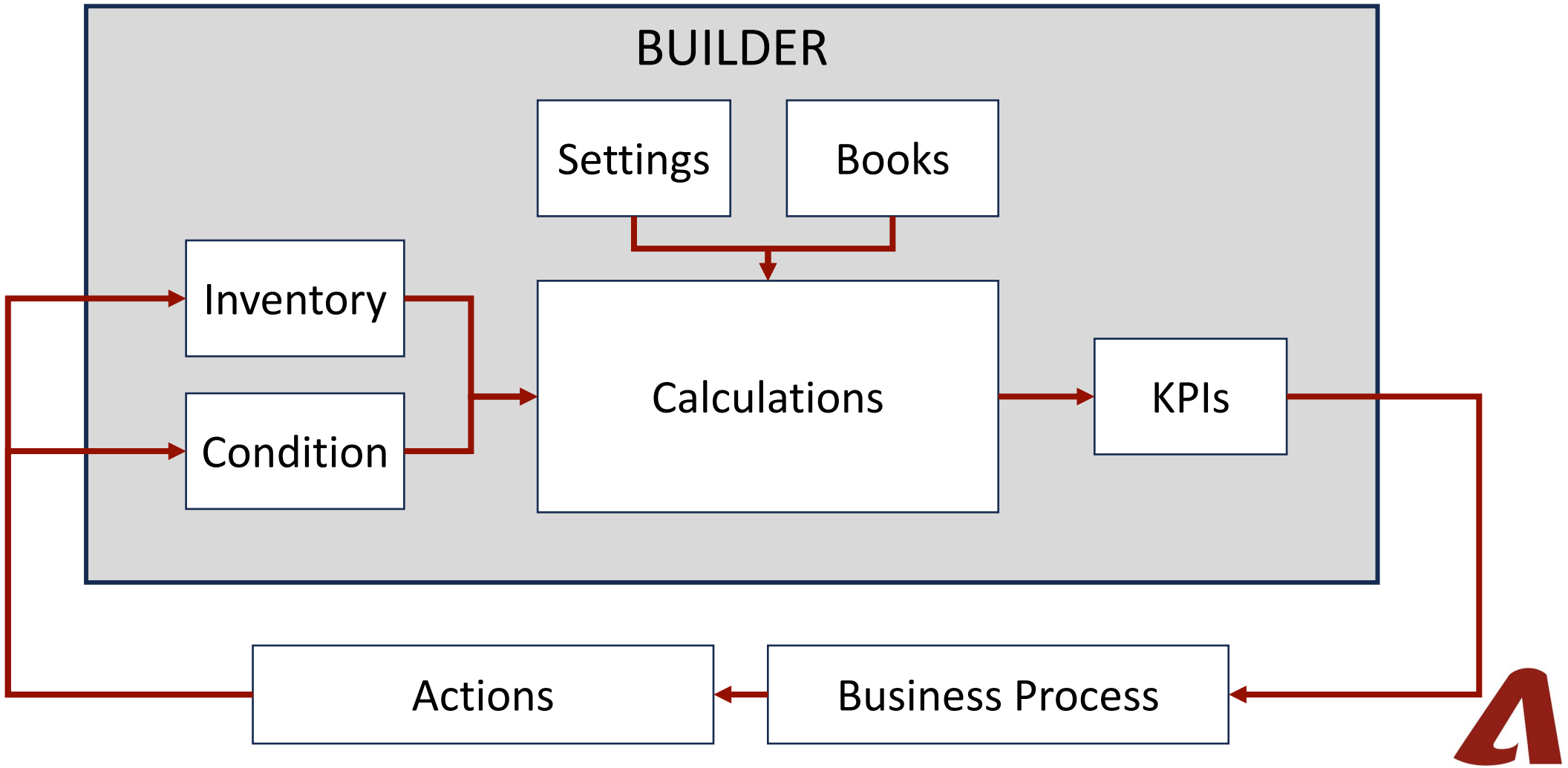
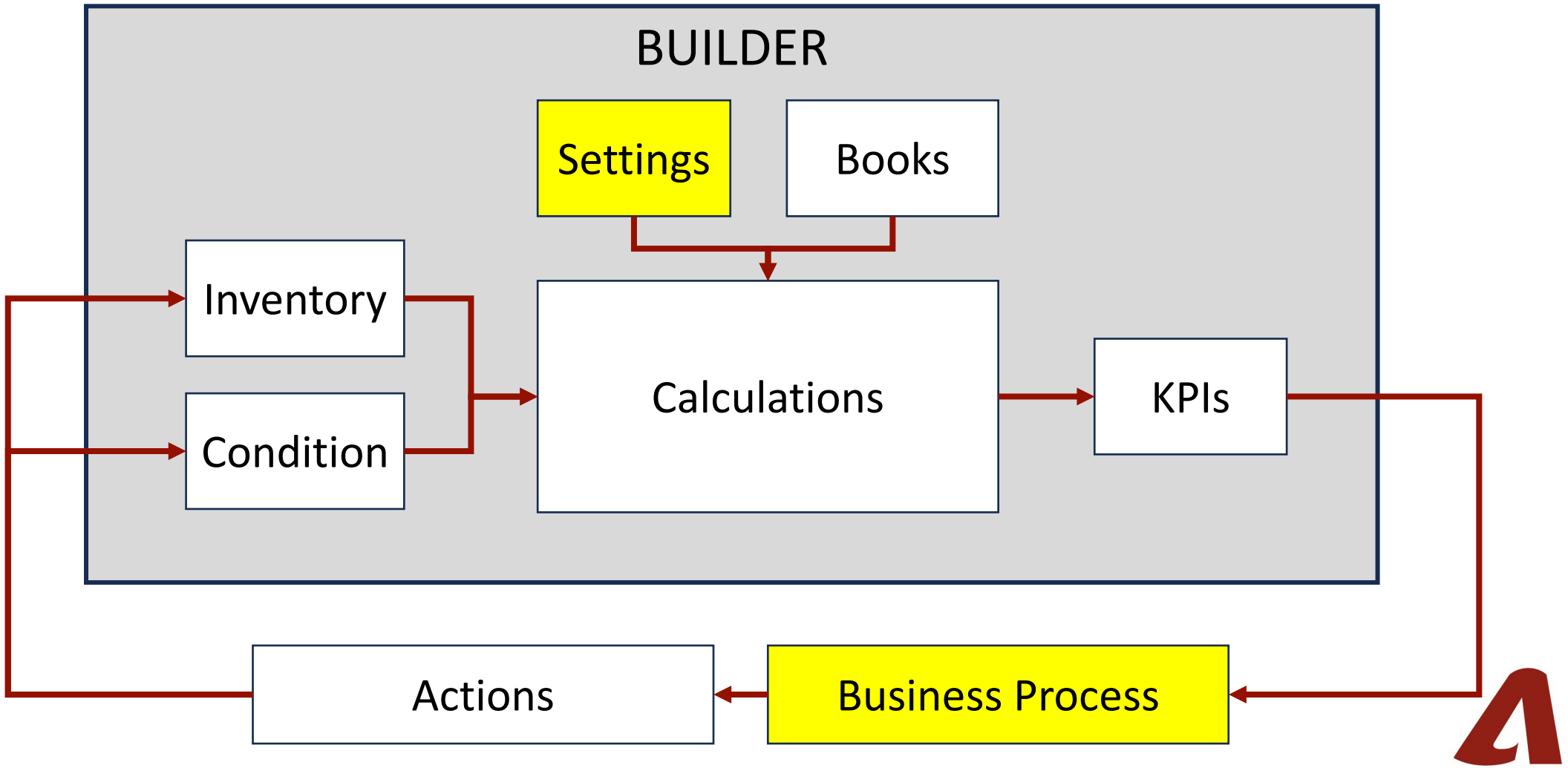
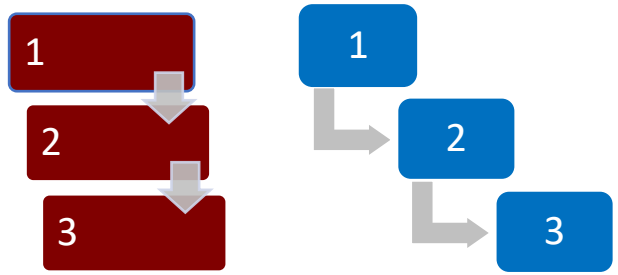
BUILDER Does Not Live in a Vacuum



Adjust Settings to Business Process



Look at 2 Different Processes



Processes:

- Red.
- Blue.

- For each process:
  - Define how the business process should work.
  - Create the BUILDER settings that are in sync with that process.
  - Show the results using real buildings.
- Compare the results between the 2 processes.

Disclaimers

The processes depicted in this presentation are fictitious and any similarity to actual processes is purely coincidental.

The buildings depicted in this presentation are real. They exist in one or more BUILDER repositories. Their names have been changed because that is what they do on TV.

No animals were injured in the making of this presentation.

No ill side effects were experienced in the making of this presentation.

Background - Work

Work in BUILDER

To keep the presentation concise:

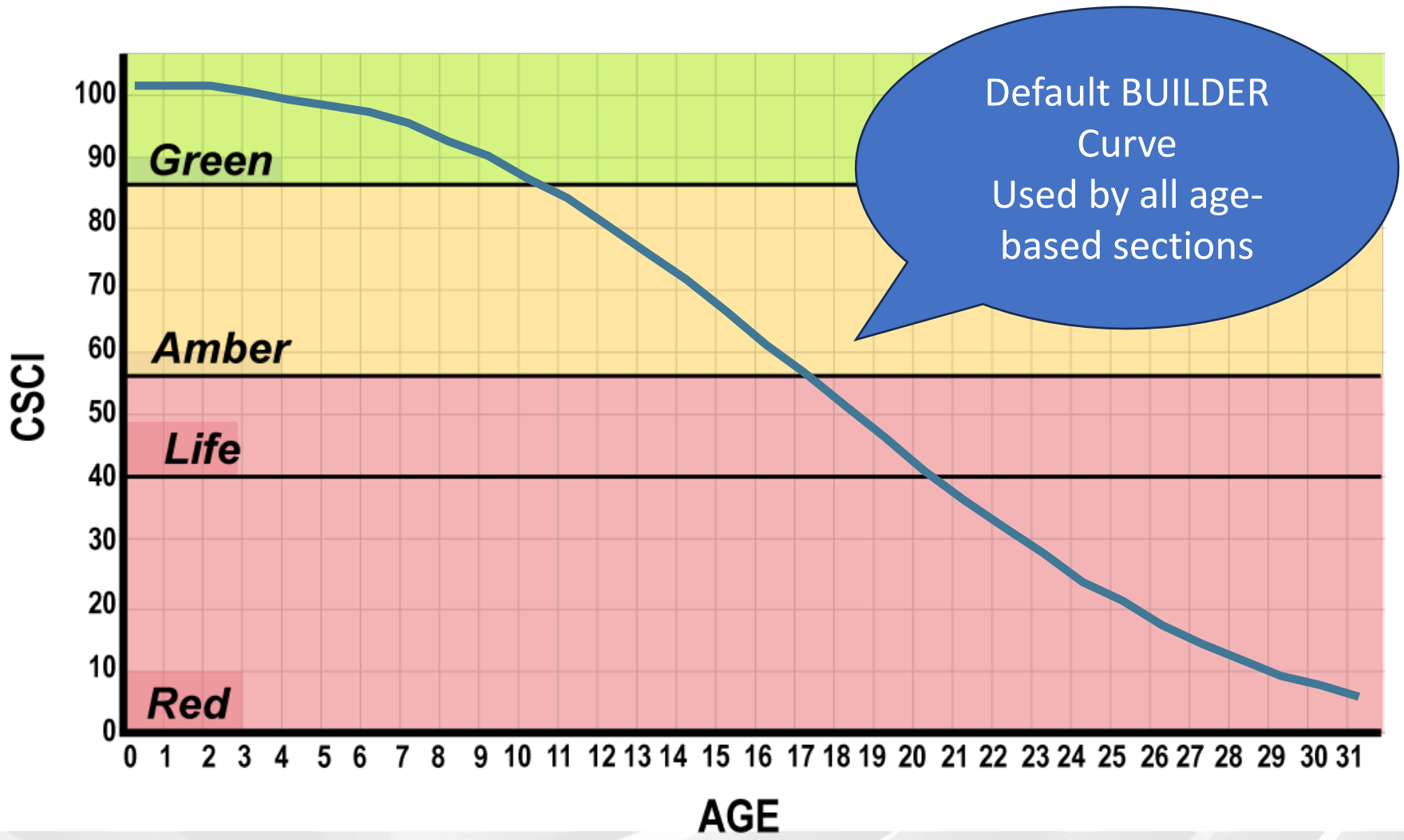
- Every section in the building will be assigned to the Default Standard.

- The Default Standard will be defined by each Process.
  - Max RSL for Replacement will be set by each process.
  - Max RPL for Replacement will be set to -99.
  - Both Repairs will be set to 0.

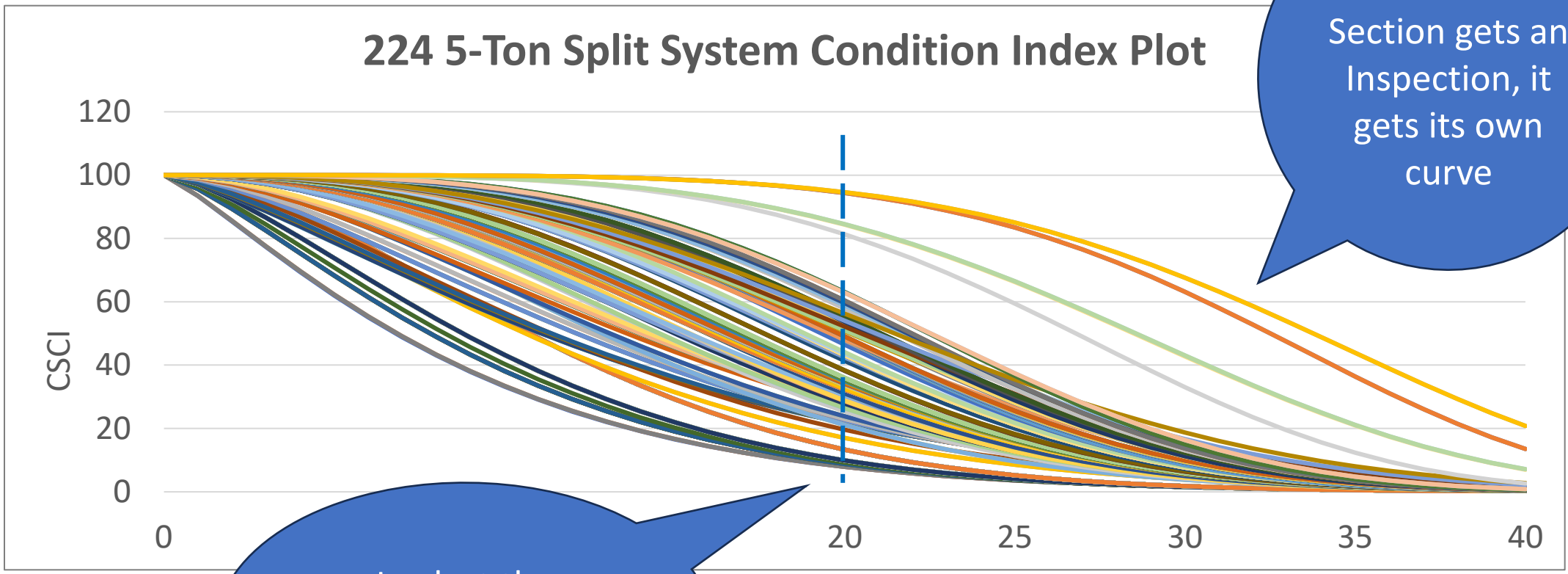
Replacement work is generated in BUILDER when:

The Remaining Service Life < = Maximum RSL for Replacement

Component Section Condition Index (CSCI)



Section Curves

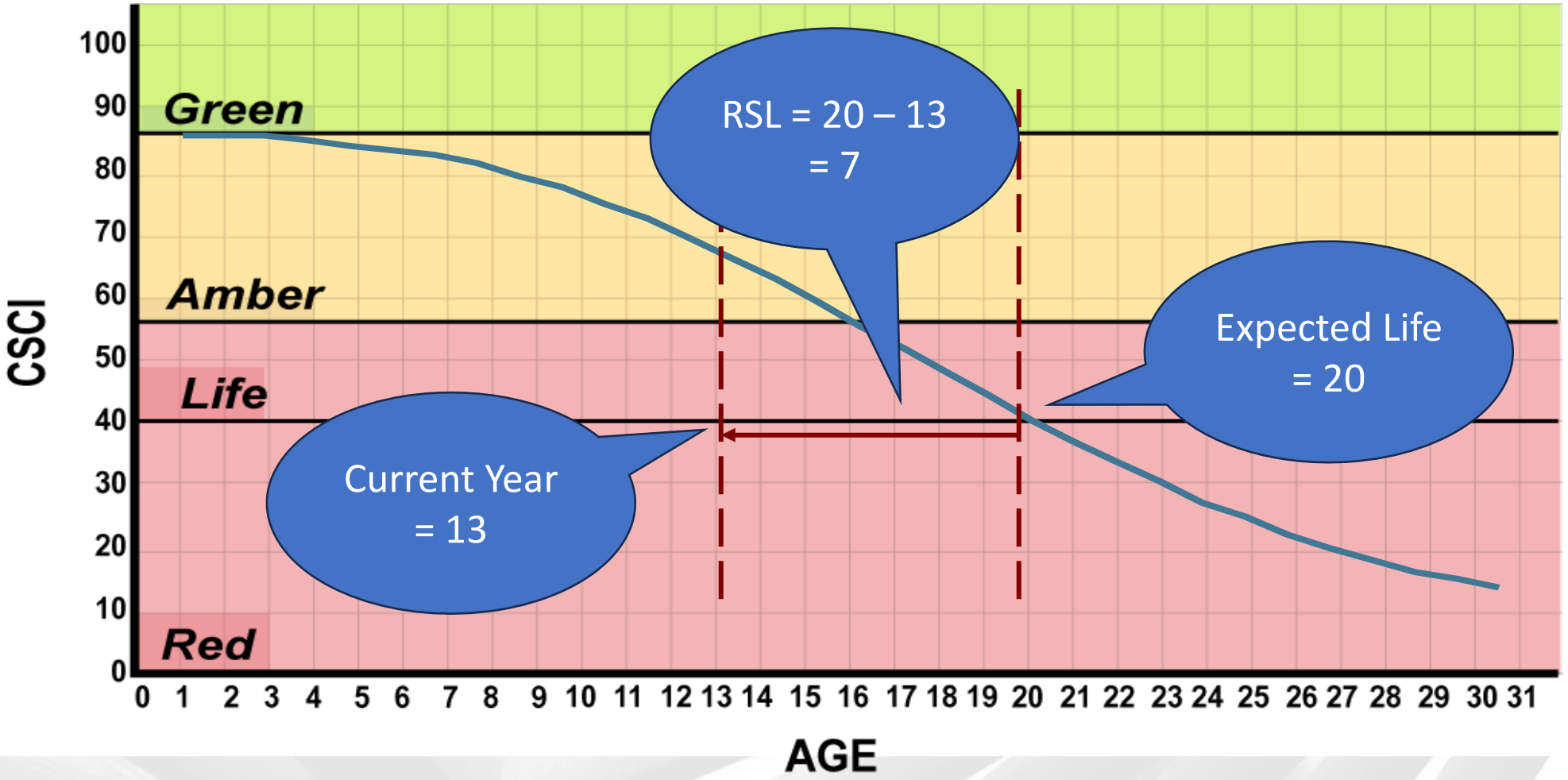


When a Section gets an Inspection, it gets its own curve

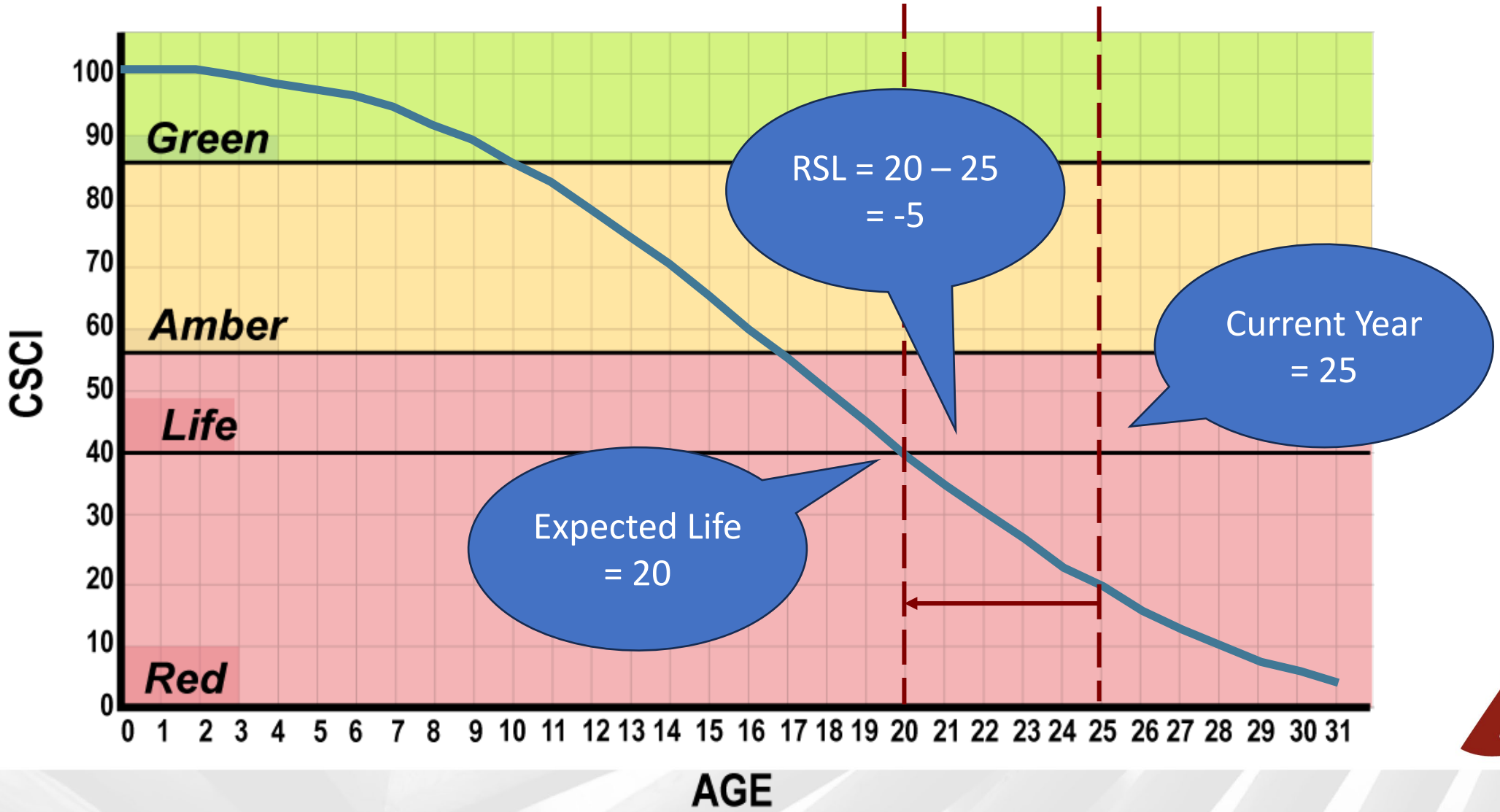
Look at the different CSCIs at year 20

Remaining Service Life (RSL)

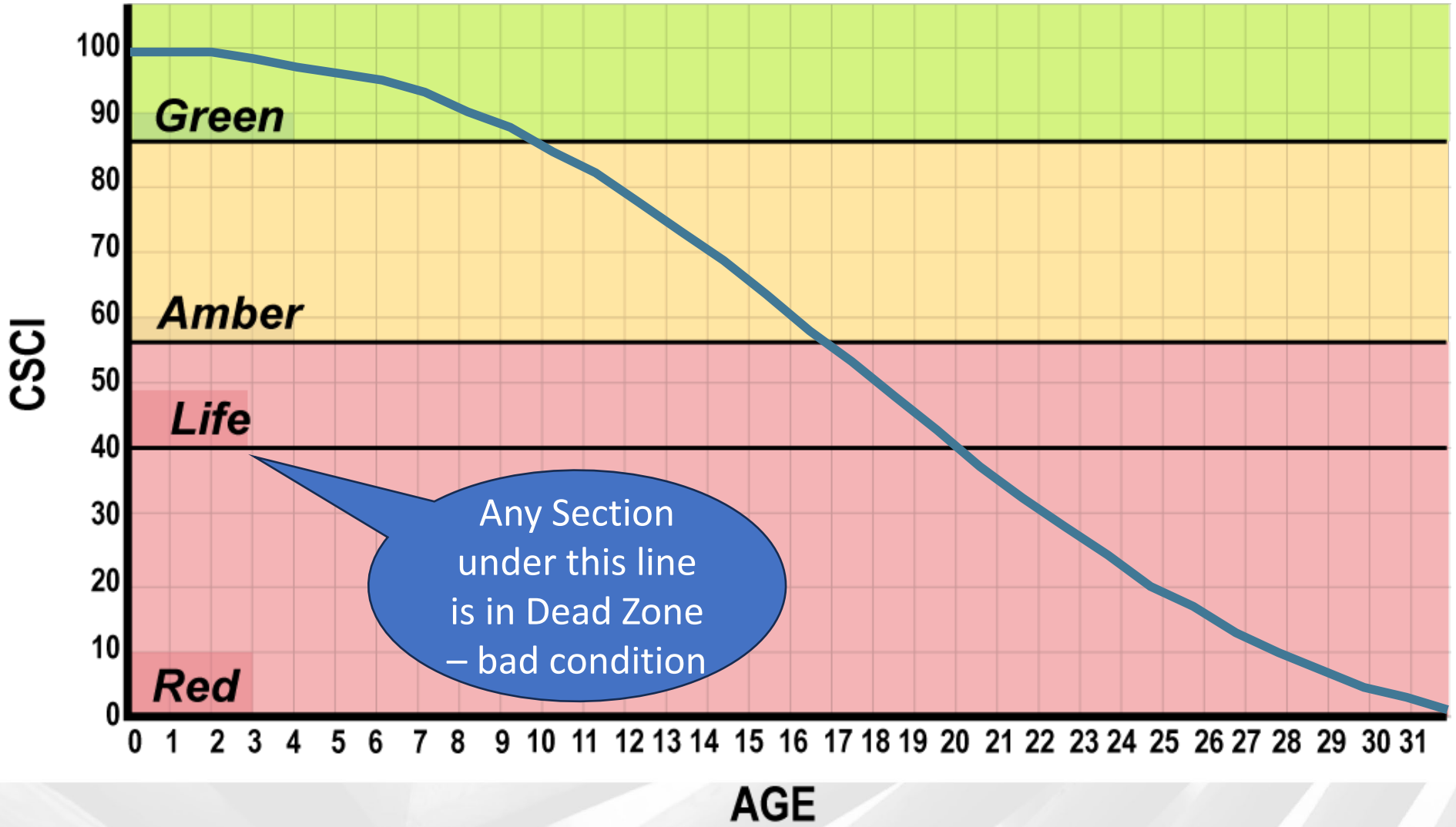
RSL = Year of End of Expected Life – Current Year

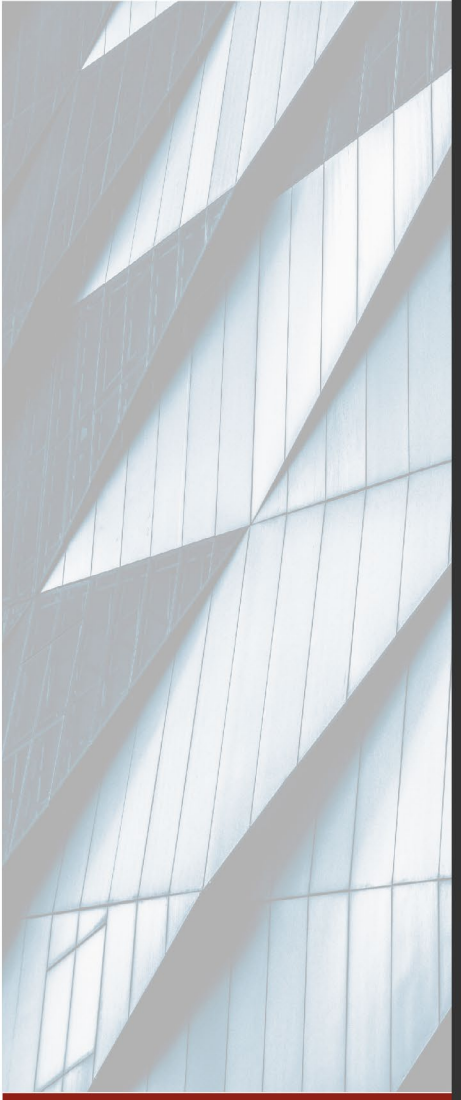


Remaining Service Life



Condition


CSCI
100
90
80
70
60
50
40
30
20
10
0
Green
Amber
Life
Red
Any Section under this line is in Dead Zone – bad condition
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
AGE



Building 1

Building 1 Condition

An RSL <= 0 means a section is in bad condition.

We can sum the cost of the sections that have a RSL <= 0.

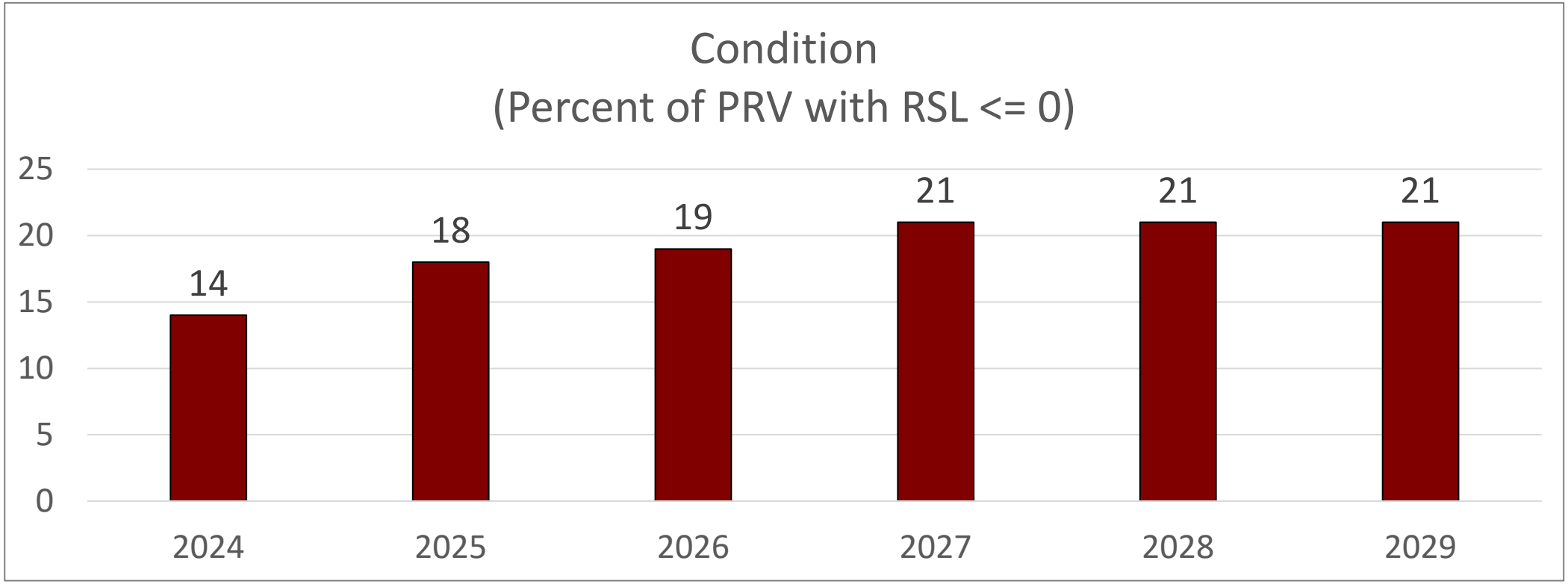
We can then compare that cost to the PRV to get a % of PRV that has an RSL <= 0.

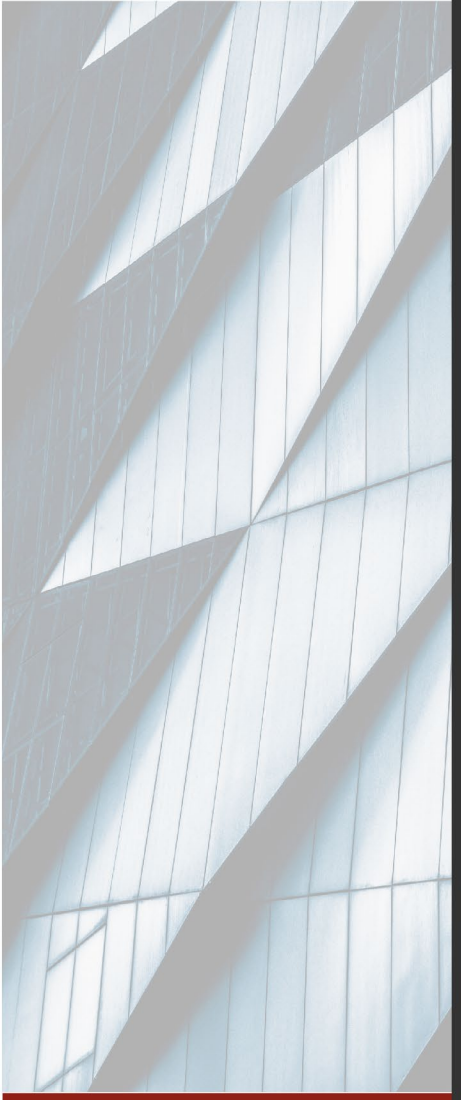
When looking at FCI, the % of PRV with an RSL <= 0 is a good condition metric that is:

- Not part of BUILDER's work calculation.
- More specific than the BCI for indicating how much of the building is in bad condition.

We don't know how this will translate to an FCI until the standards are defined.

Building 1's Condition

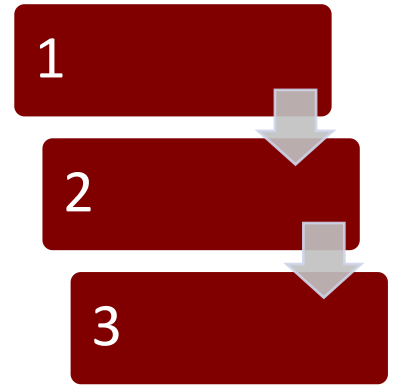




Red Process for Building 1

Red Process

- Buildings need to be on a Needs Attention list before they get funds for work.
- Buildings need to be on the Needs Attention list two years before they really need the attention because it takes that long to get the funding and perform the work.
- Buildings get on the Needs Attention list when the current FCI drops below 80.



Red Process Implementation

Problem:

Need the FCI to drop below 80 2 years before the % of PRV with an RSL <= 0 is greater than 20%.

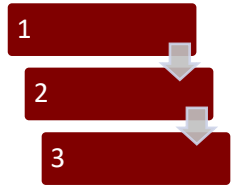
Never want the % of PRV for sections with an RSL <= 0 to be greater than 20%.

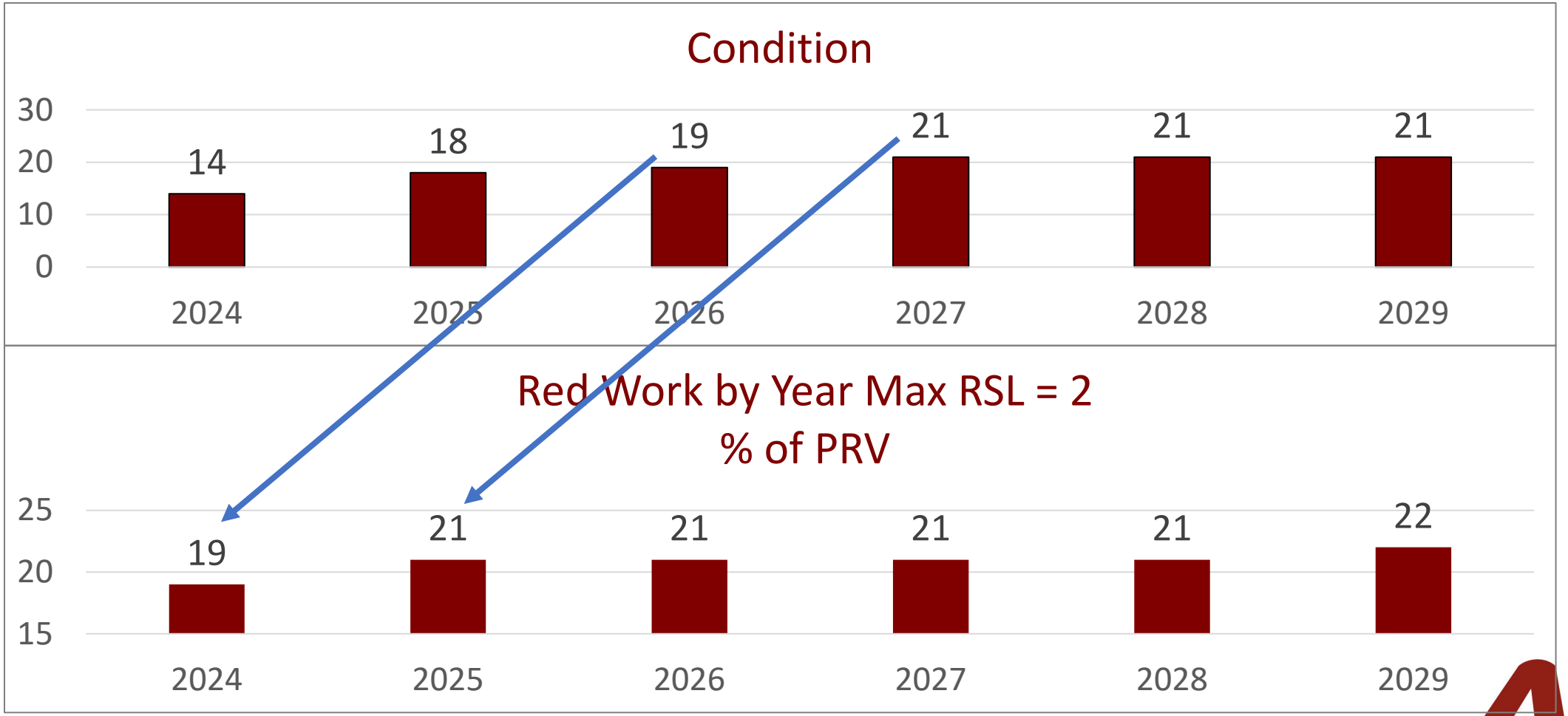
Solution:

Set the Max RSL for Replacement to 2.

- This has the effect of shifting the % of PRV with an RSL <= 0 2 years to the left.
- The condition hasn't really change, but we can calculate the FCI.

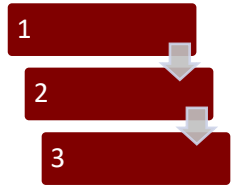
Impact of the Red BUILDER Settings

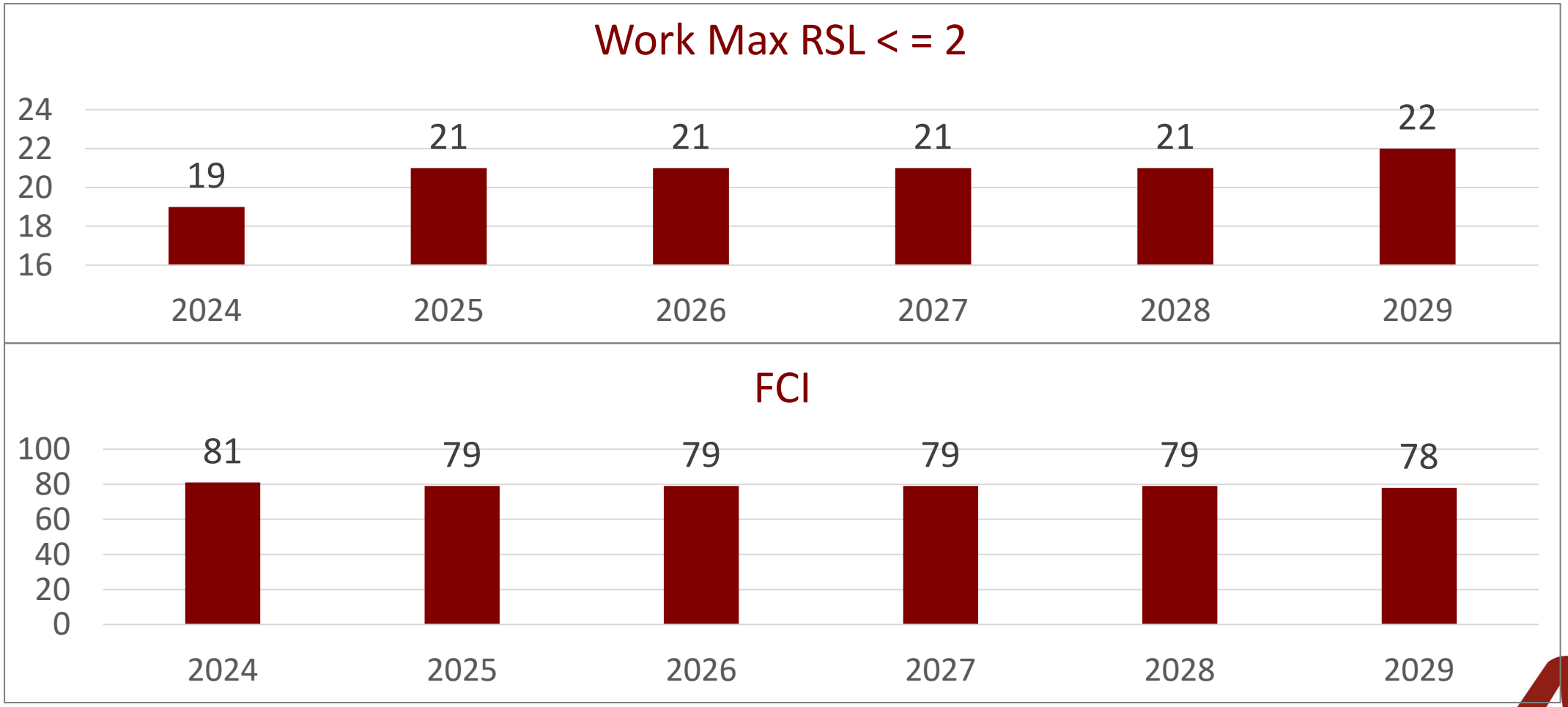




Max RSL of 2 is the same as shifting Max RSL of 0 Two years to the left.

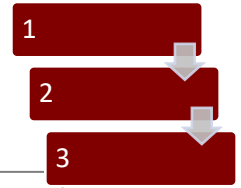
Calculate the FCI

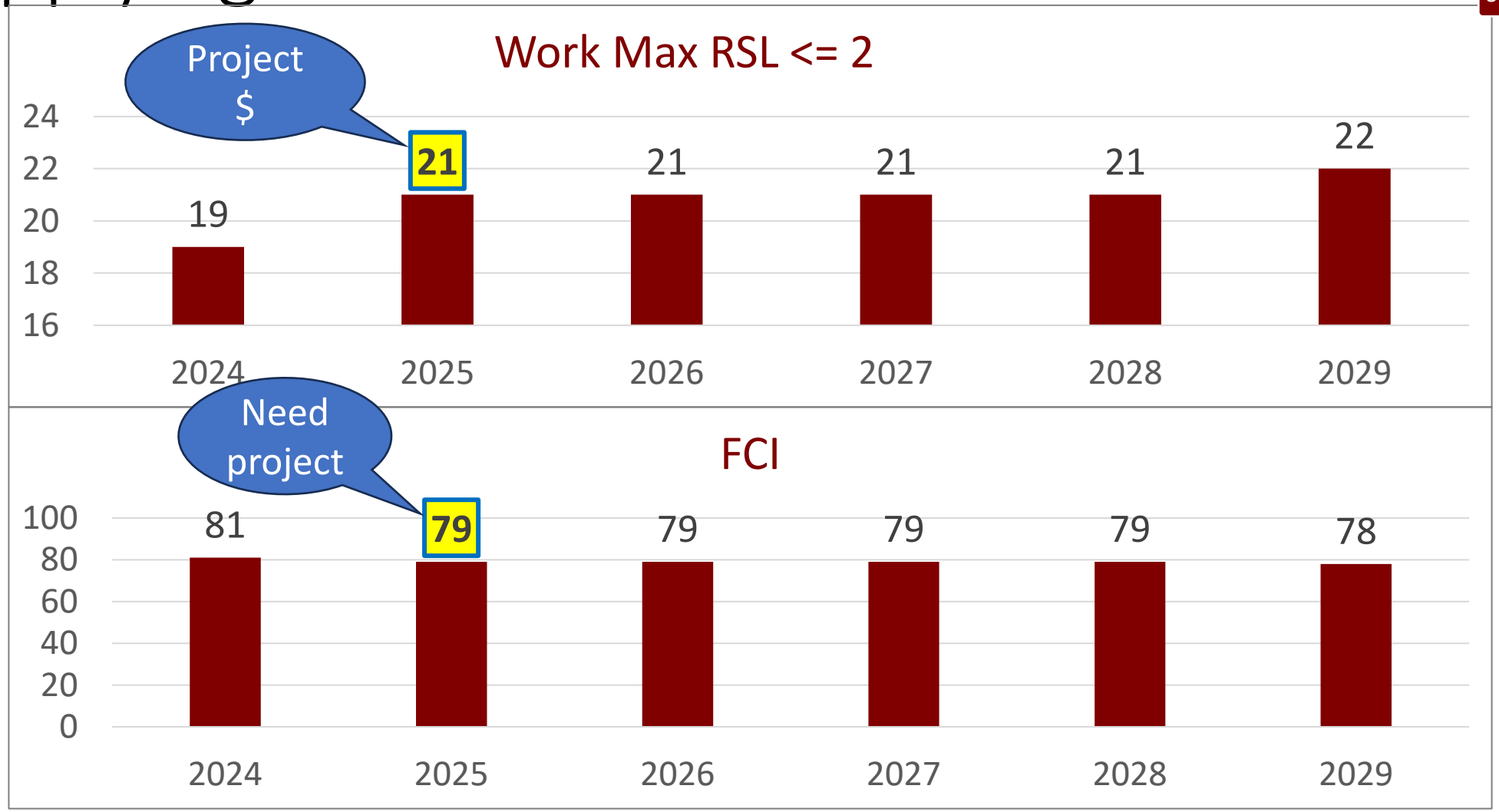




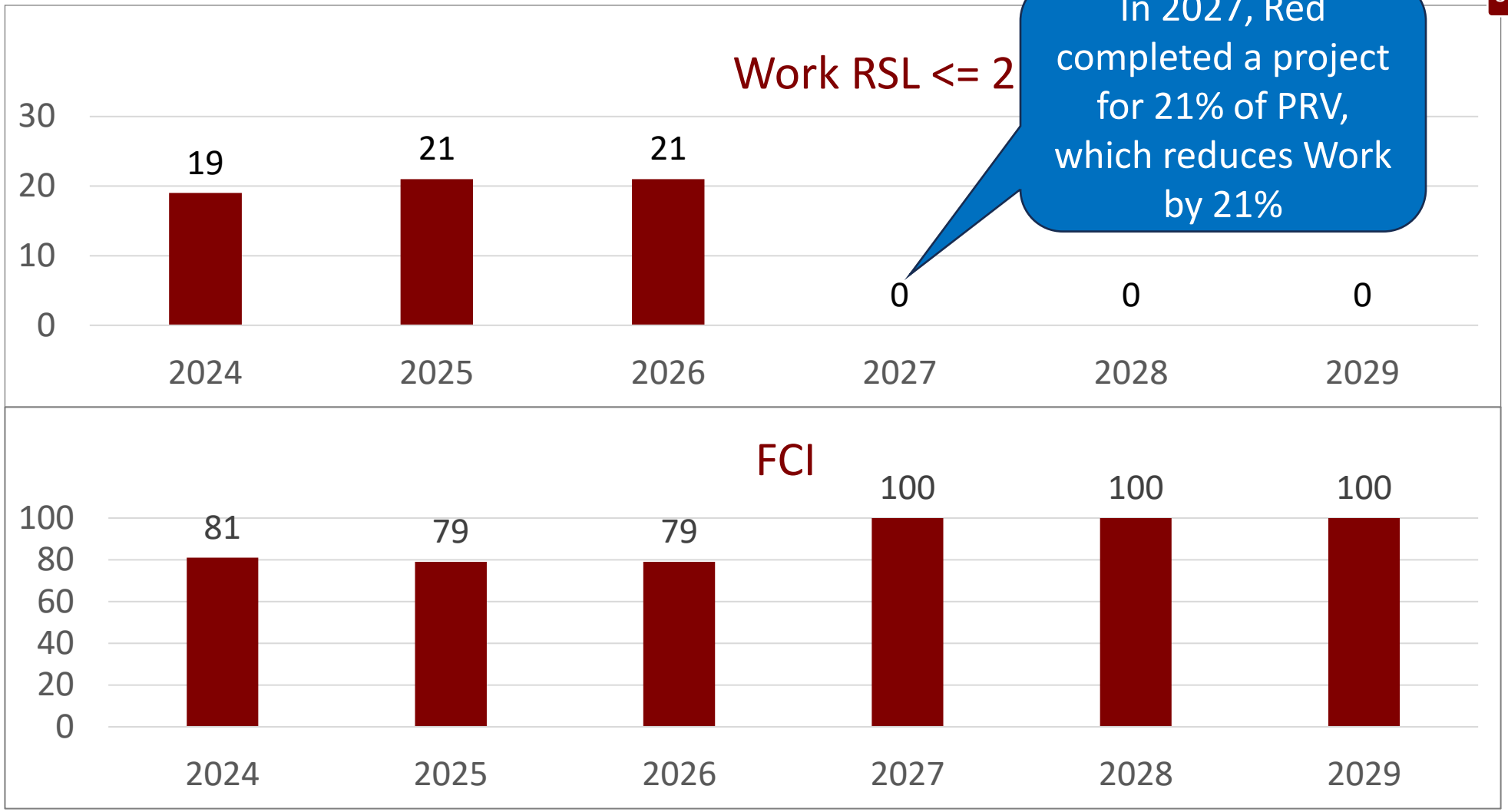
FCI = 100 – Work as a % of PRV

Applying the Red Process

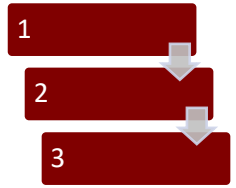


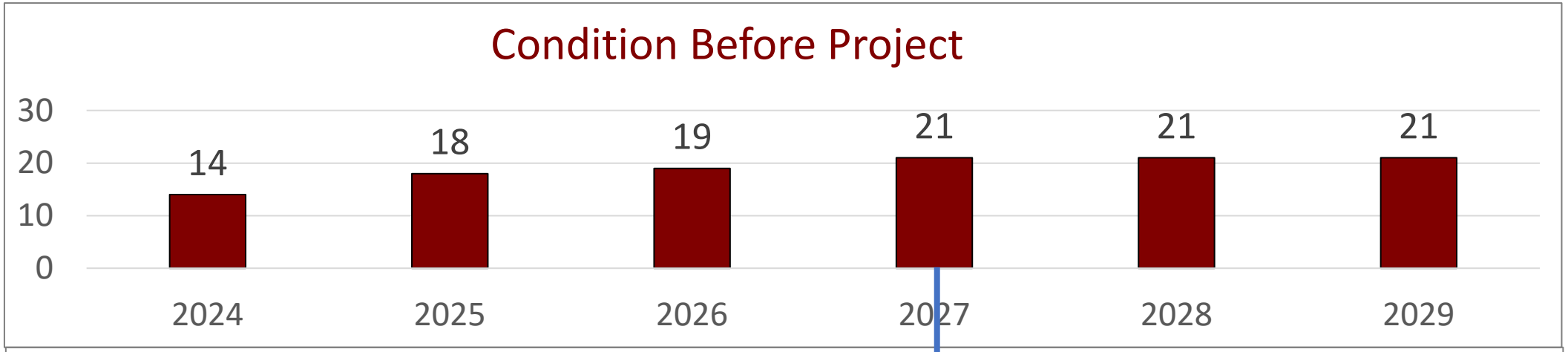


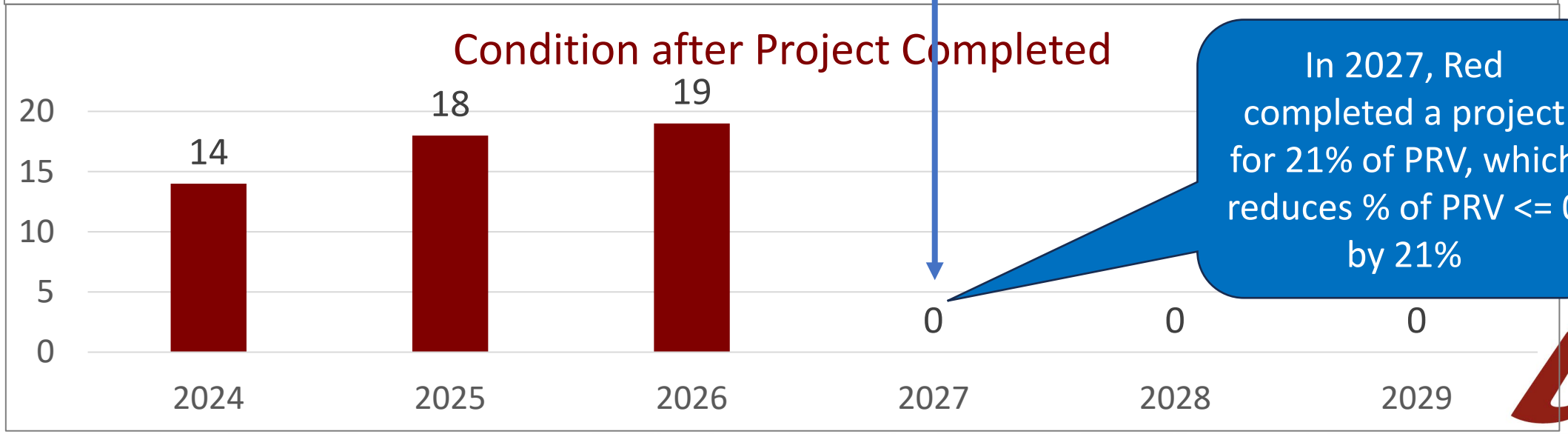
The Results of the Red Process



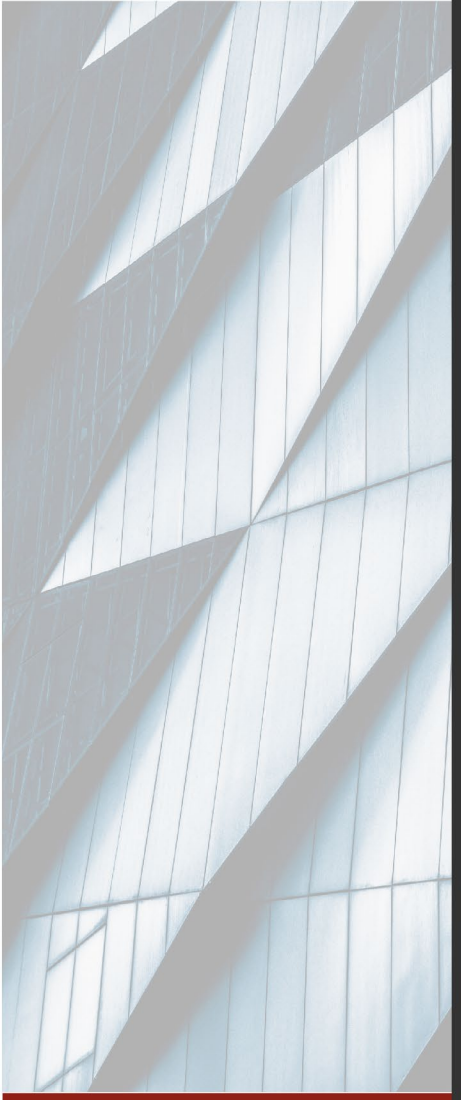
Converting Work Back to Condition







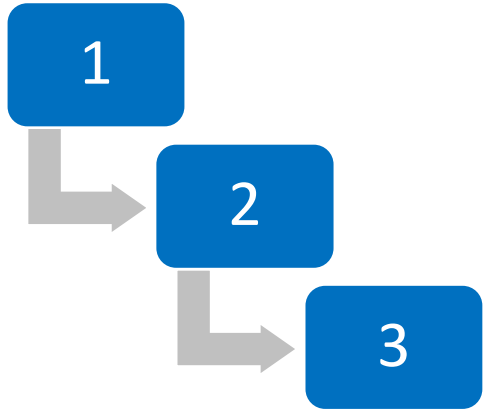
In 2027, Red completed a project for 21% of PRV, which reduces % of PRV <= 0 by 21%



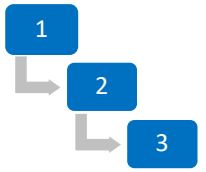
Blue Process for Building 1

Blue Process

- Buildings need to be on a Needs Attention list before they get funds for work.
- Buildings need to be on the Needs Attention list two years before they really need the attention because it takes that long to get the funding and perform the work.
- Never want buildings to have an FCI below 80.



Blue Process Implementation



Problem:

Need to predict when the FCI will drop below 80 2 years before it happens.

Never want the % of PRV for sections with an RSL <= 0 to be greater than 20%.

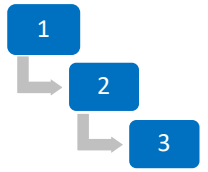
Solution:

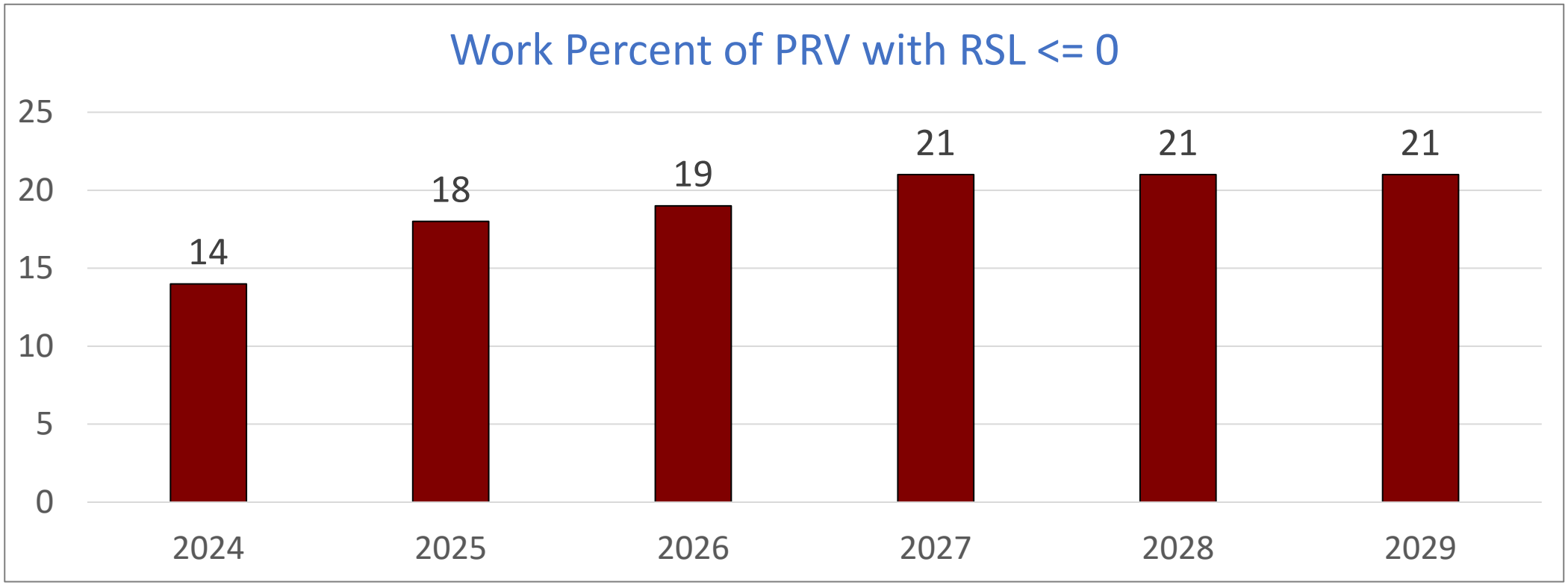
Set the Max RSL for Replacement to 0.

Use Scenarios to forecast the FCI.

When the FCI drops to below an 80 in the forecast, create a project to fix the building 2 years before that.

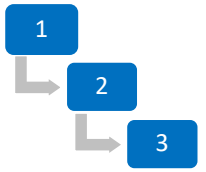
Impact of the Blue BUILDER Settings

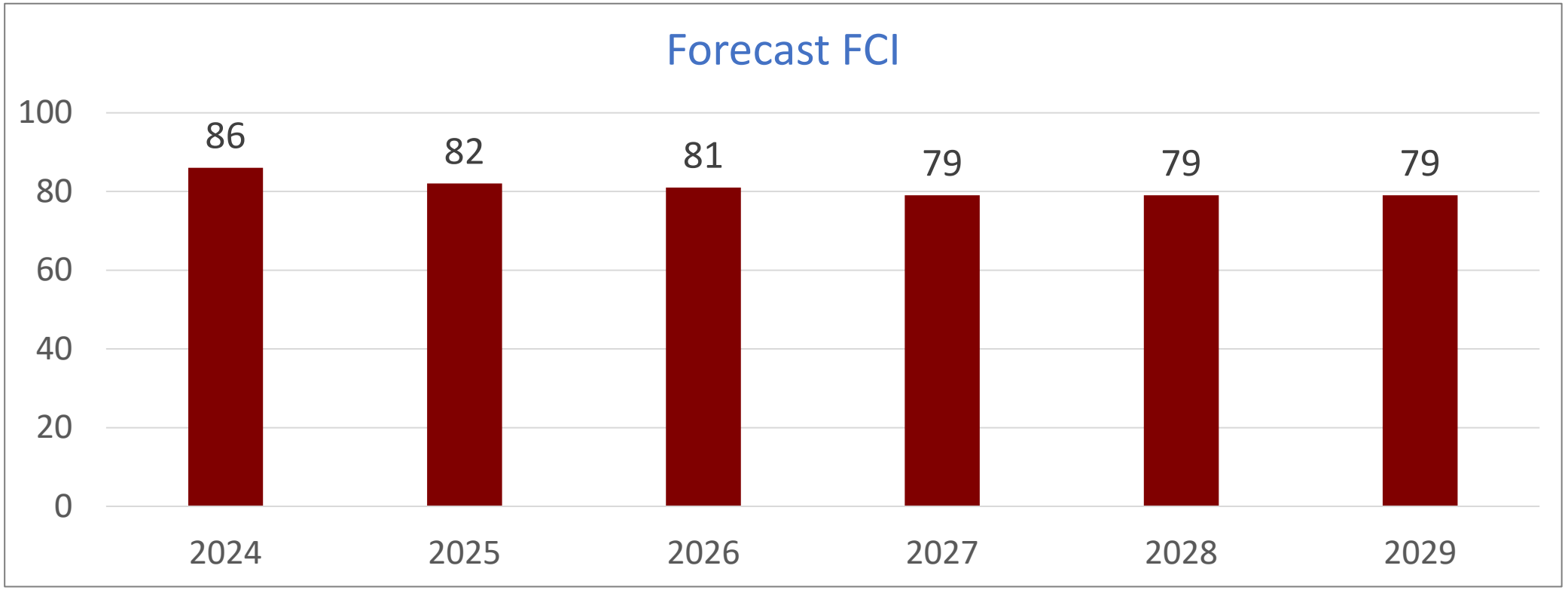




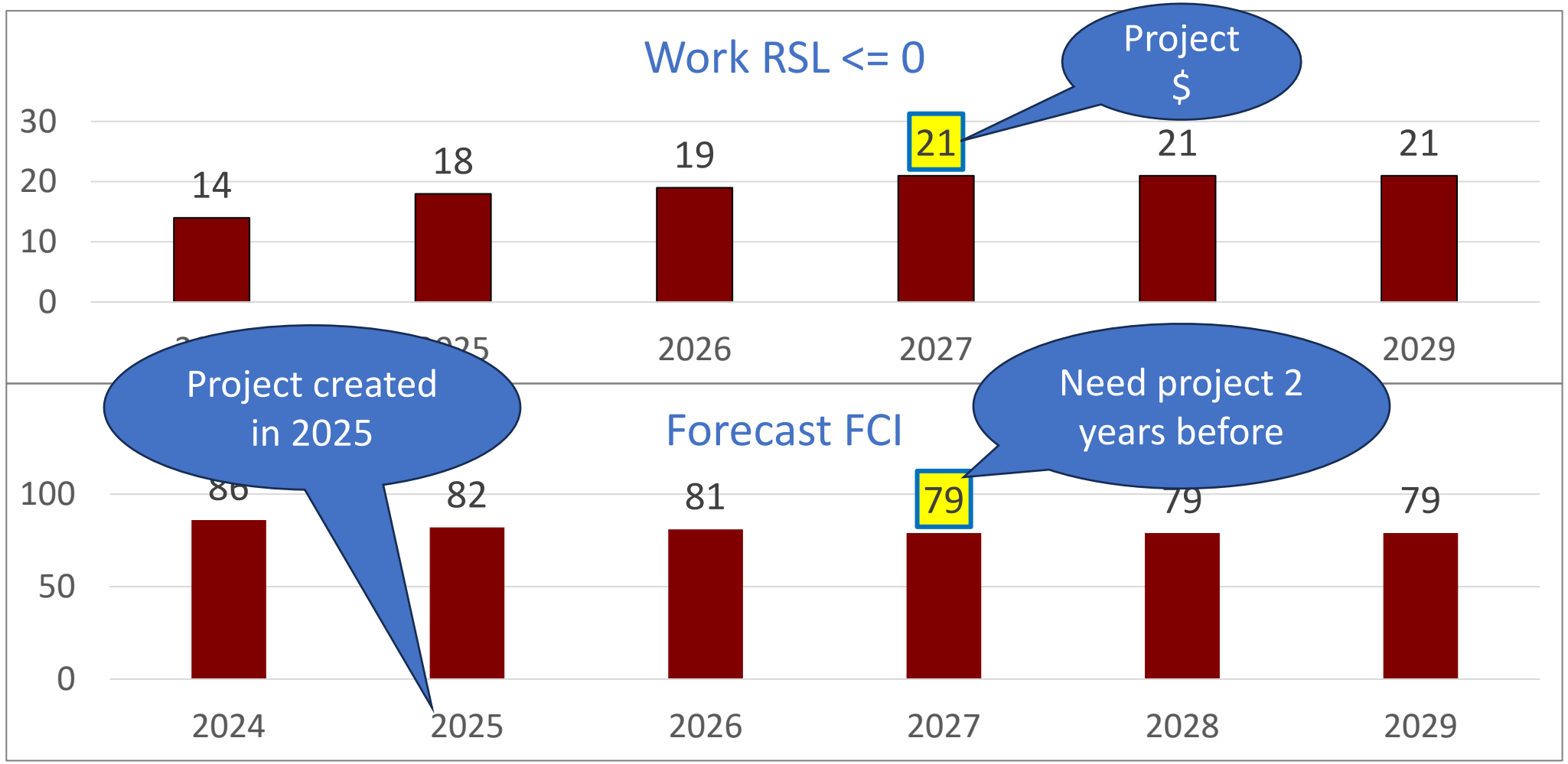
No shift with a Max RSL for Replacement of 0.

Using BUILDER's Scenario to Get FCIs

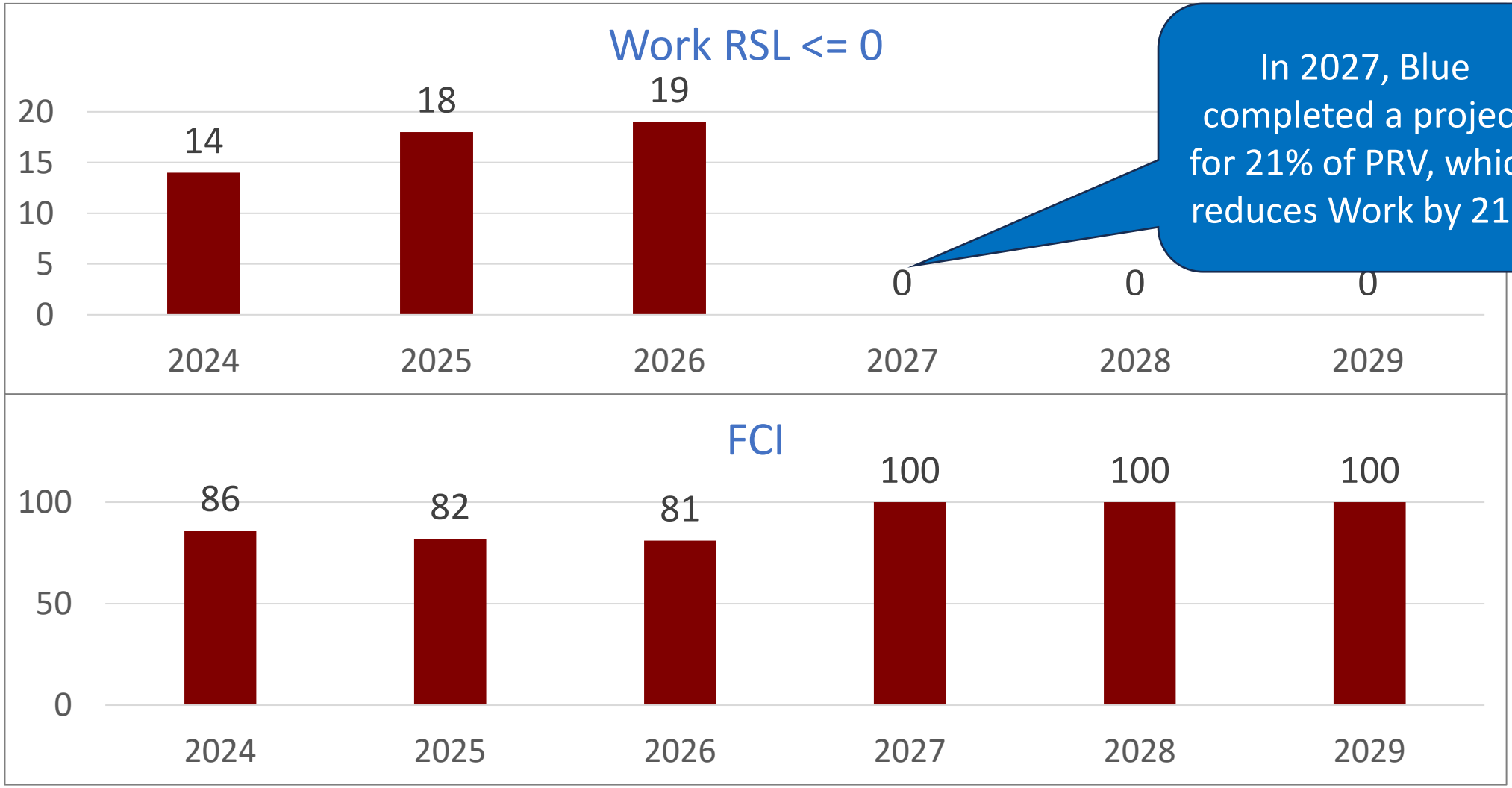




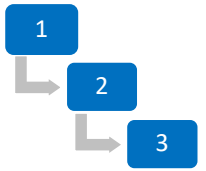
Applying the Blue Process

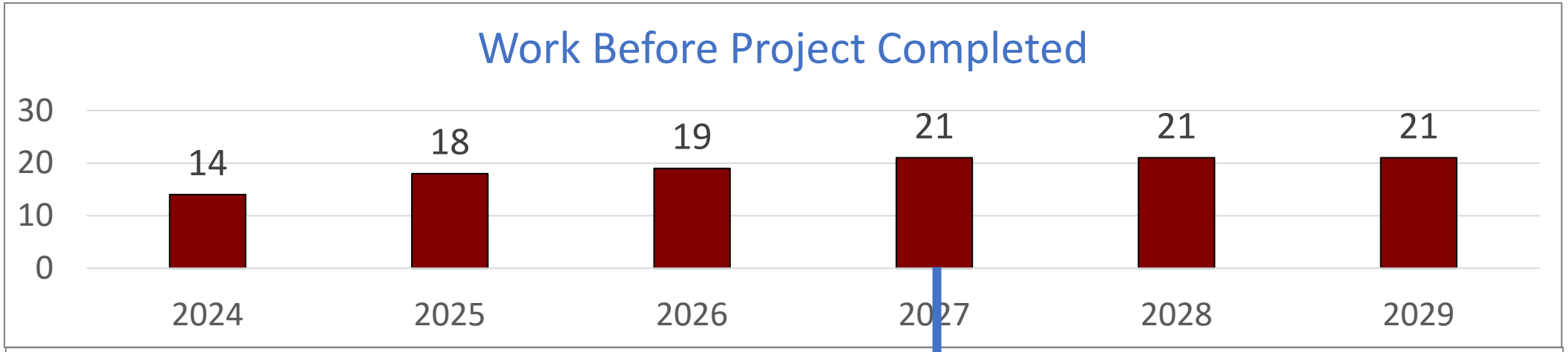


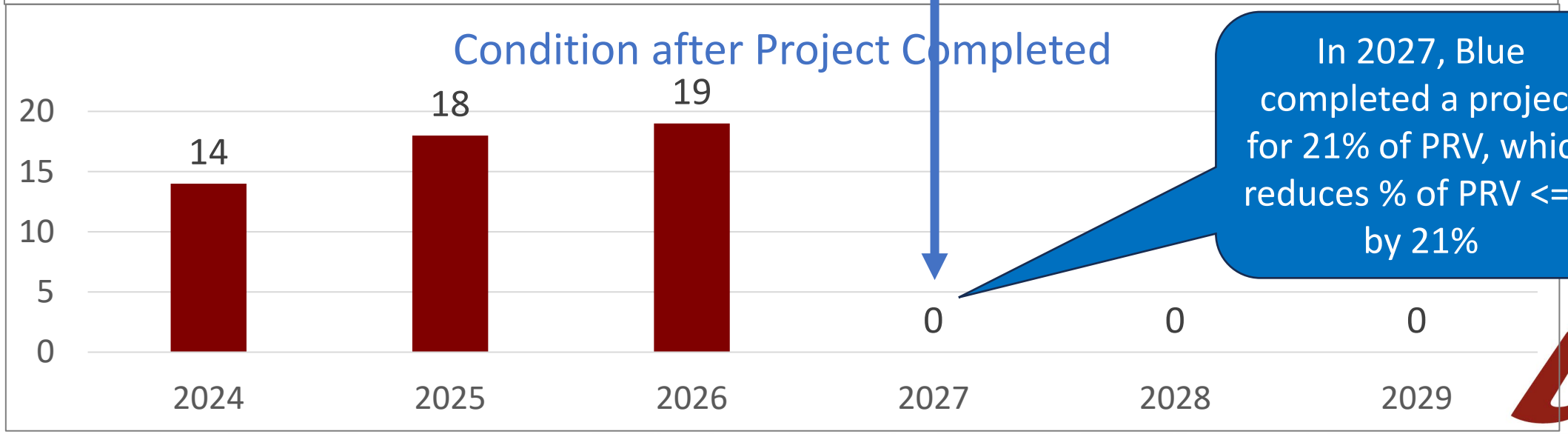
The Results of the Blue Process



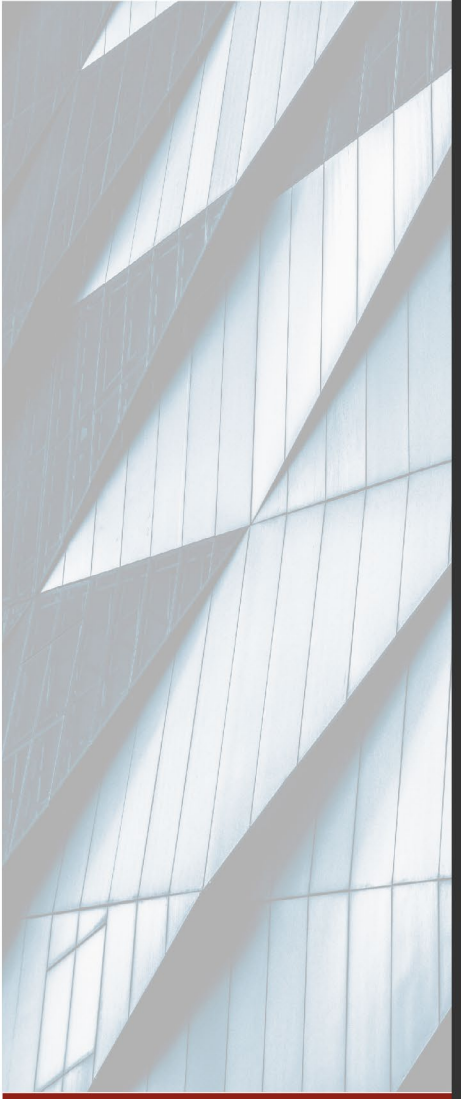
Converting Work Back to Condition







In 2027, Blue completed a project for 21% of PRV, which reduces % of PRV <= 0 by 21%

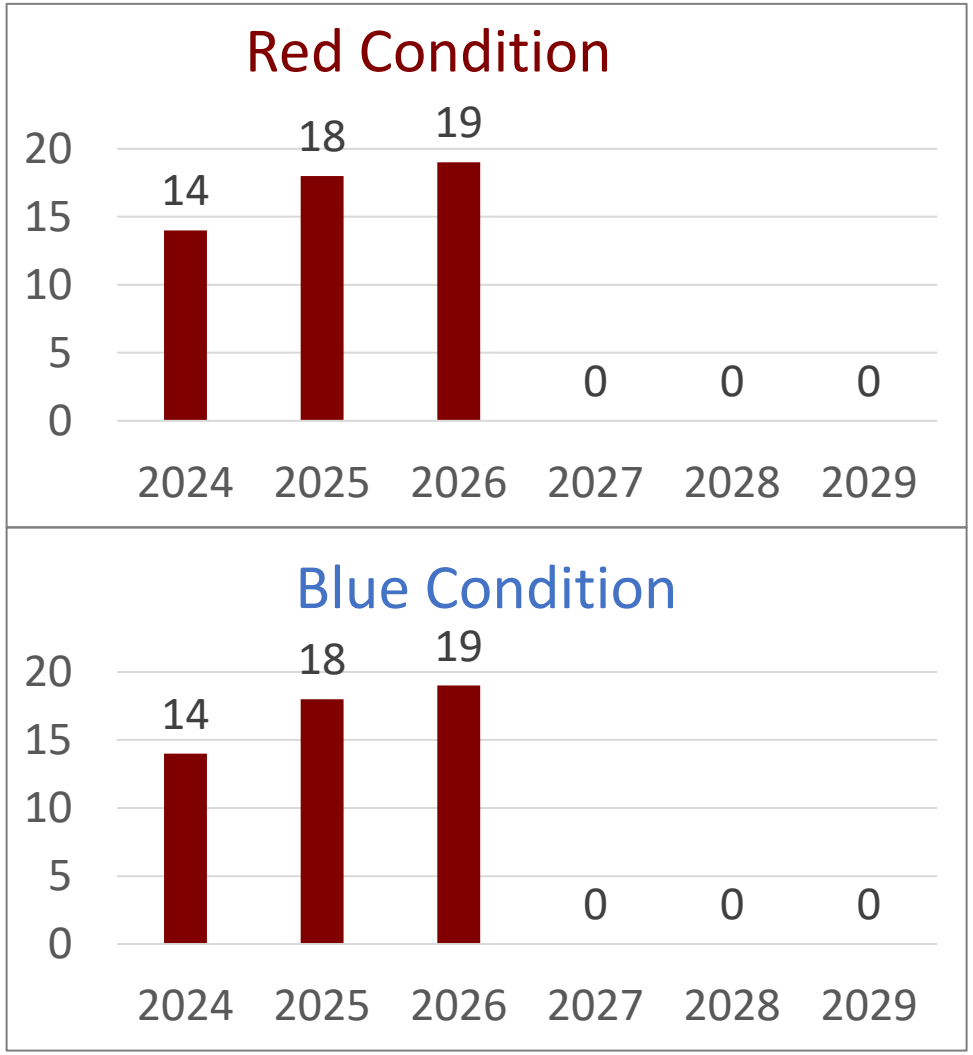


Comparison Building 1

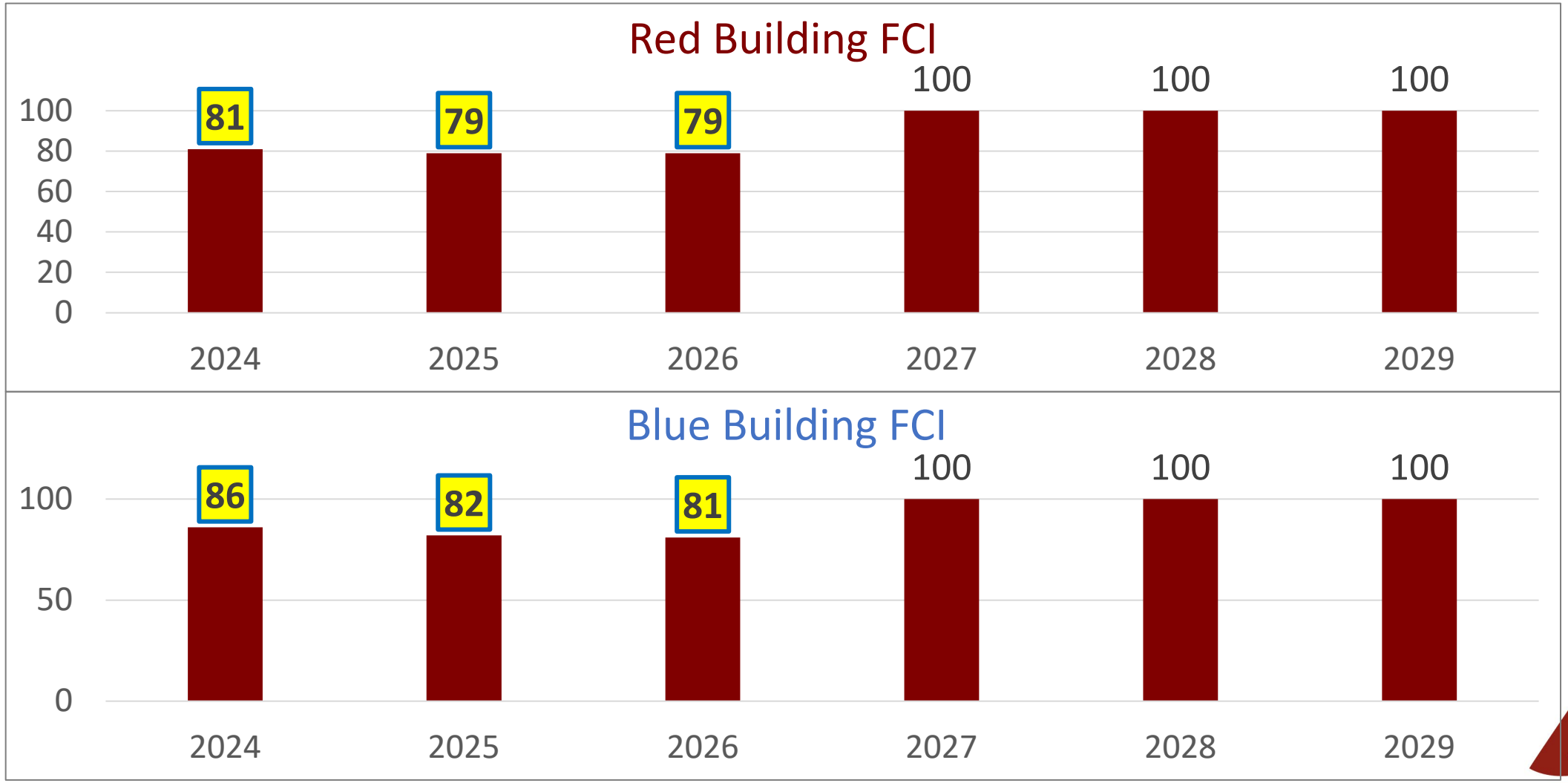
Results

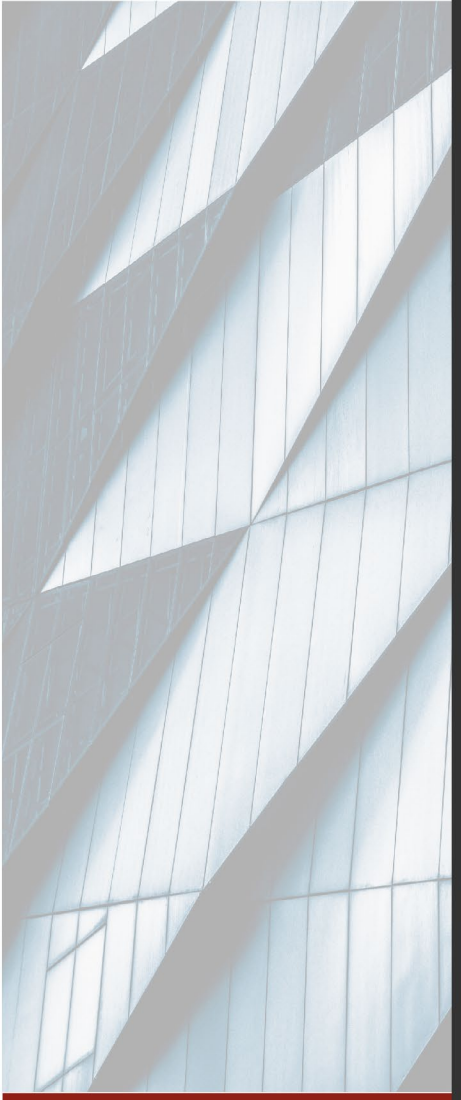
Both Projects:

- Project identified in 2025.
- Project fixed 21% of PRV.
- The buildings were in the exact same condition for all years.



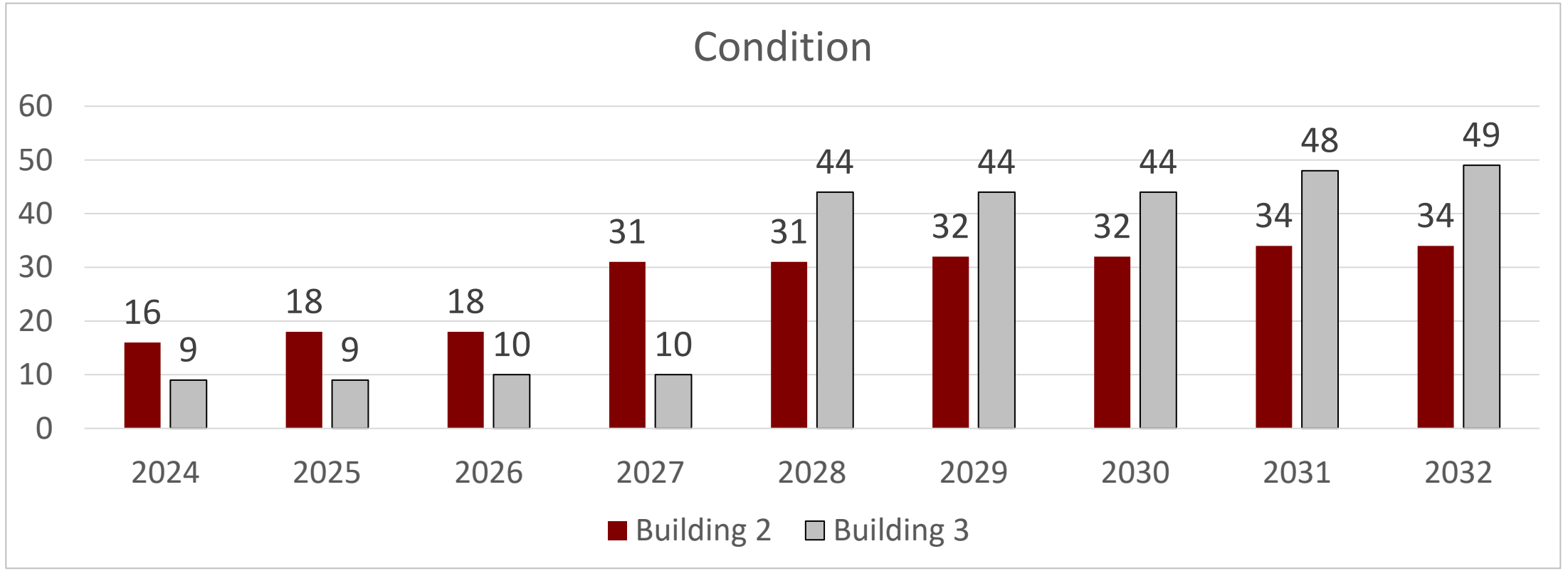
Side Effects – Different FCIs





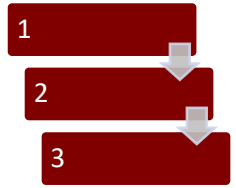
Buildings 2 and 3

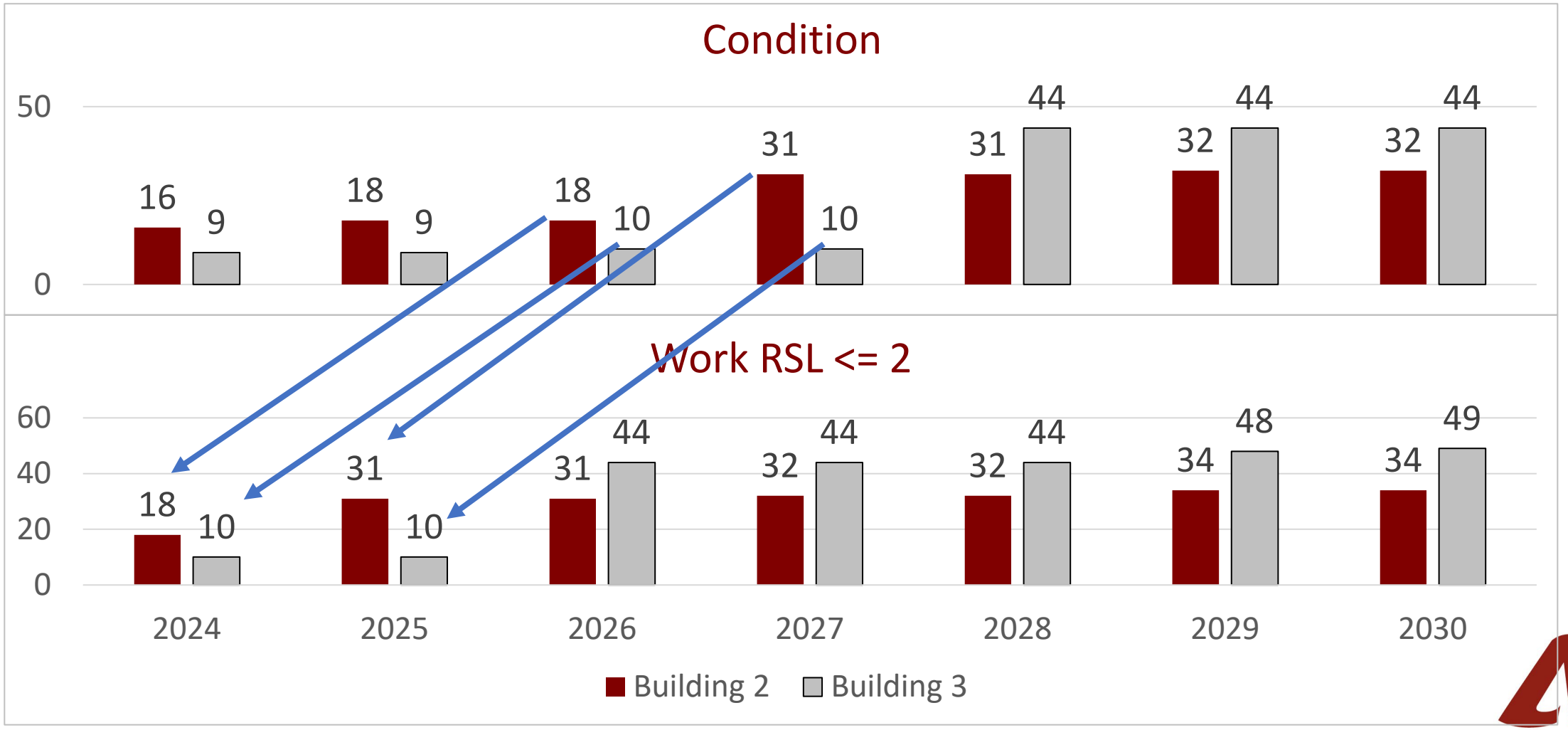
Buildings 2 and 3 Condition



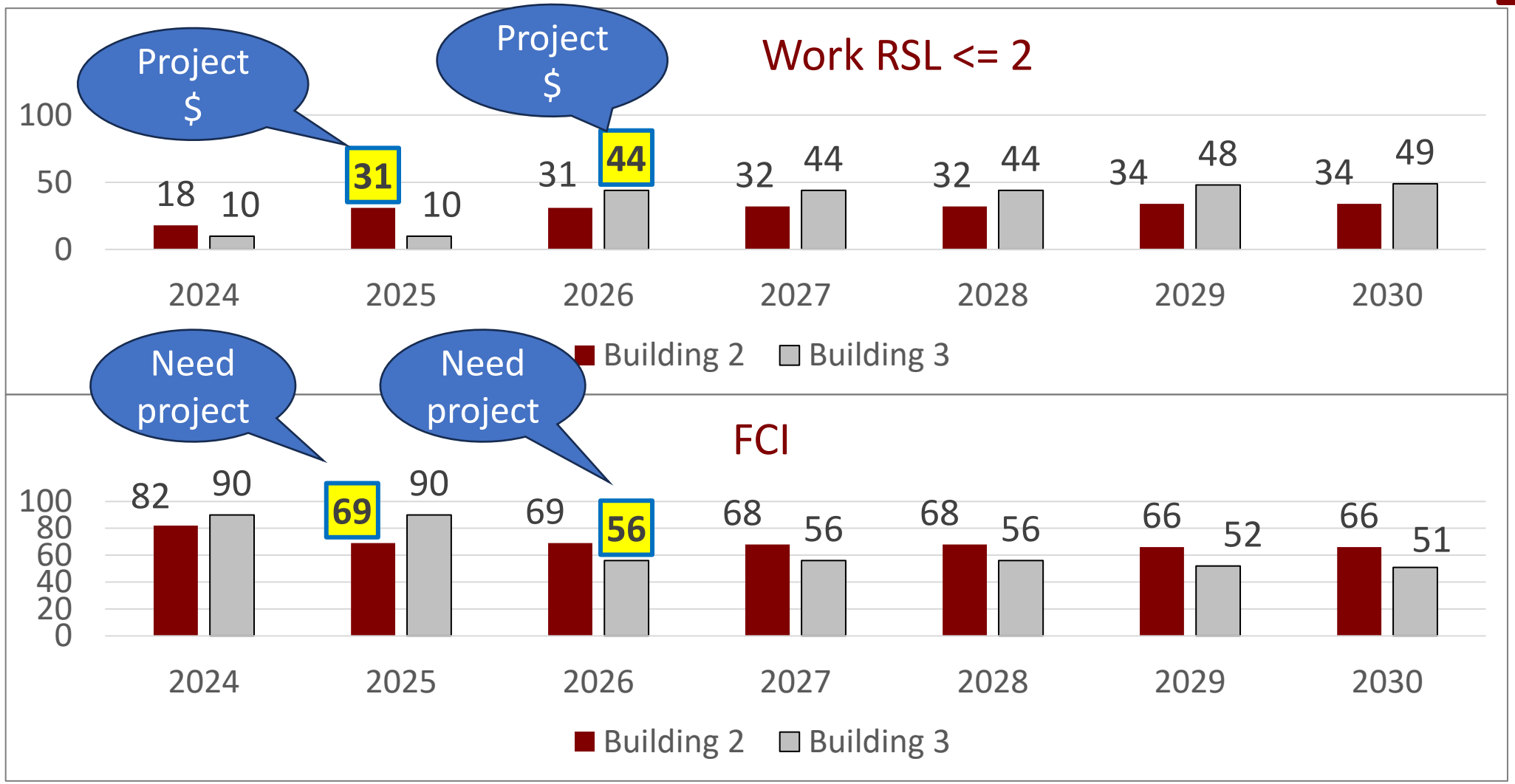
Red Process for Buildings 2 and 3

Impact of the Red BUILDER Settings

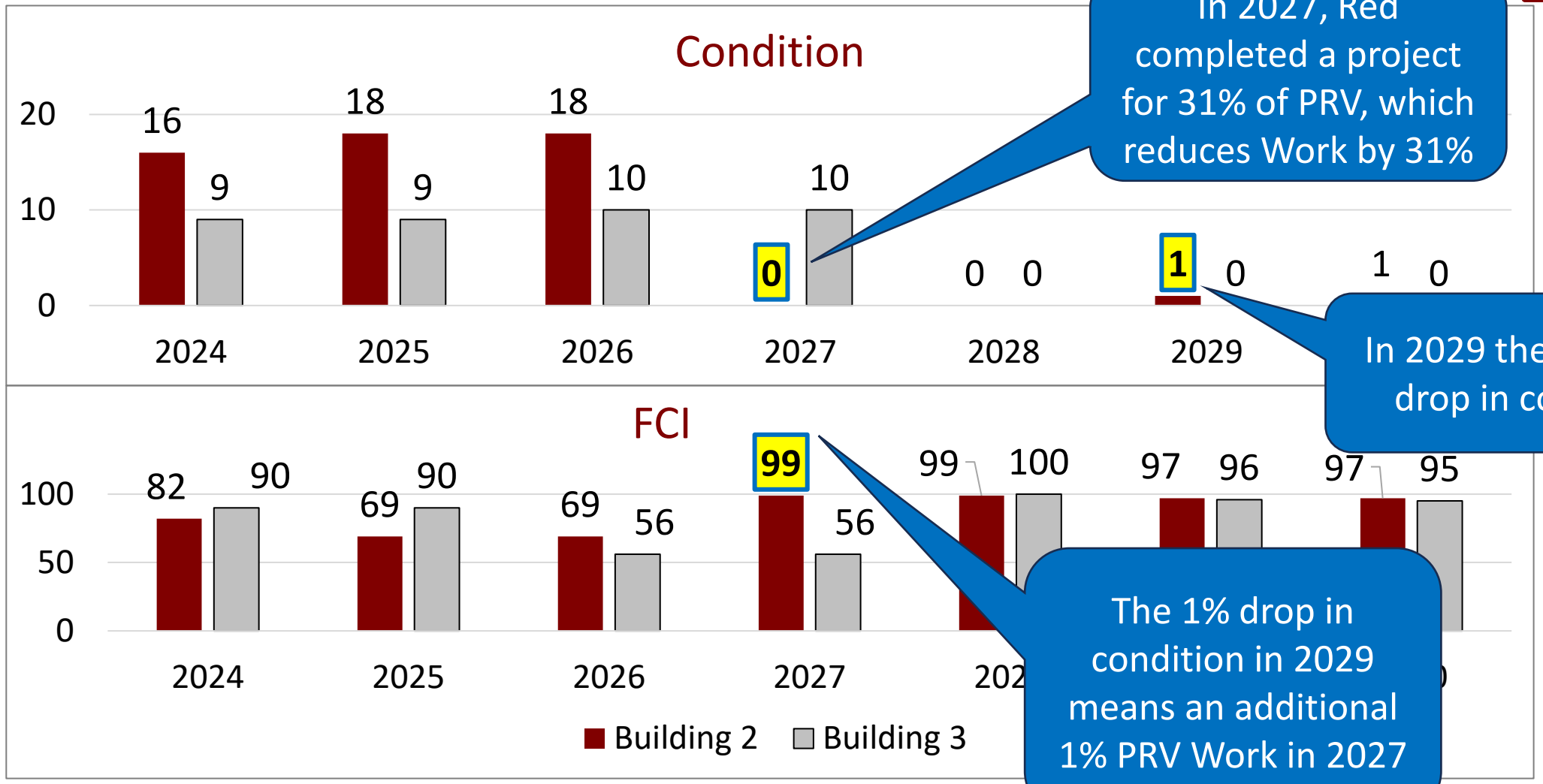




Applying the Red Process



The Results of the Red Process

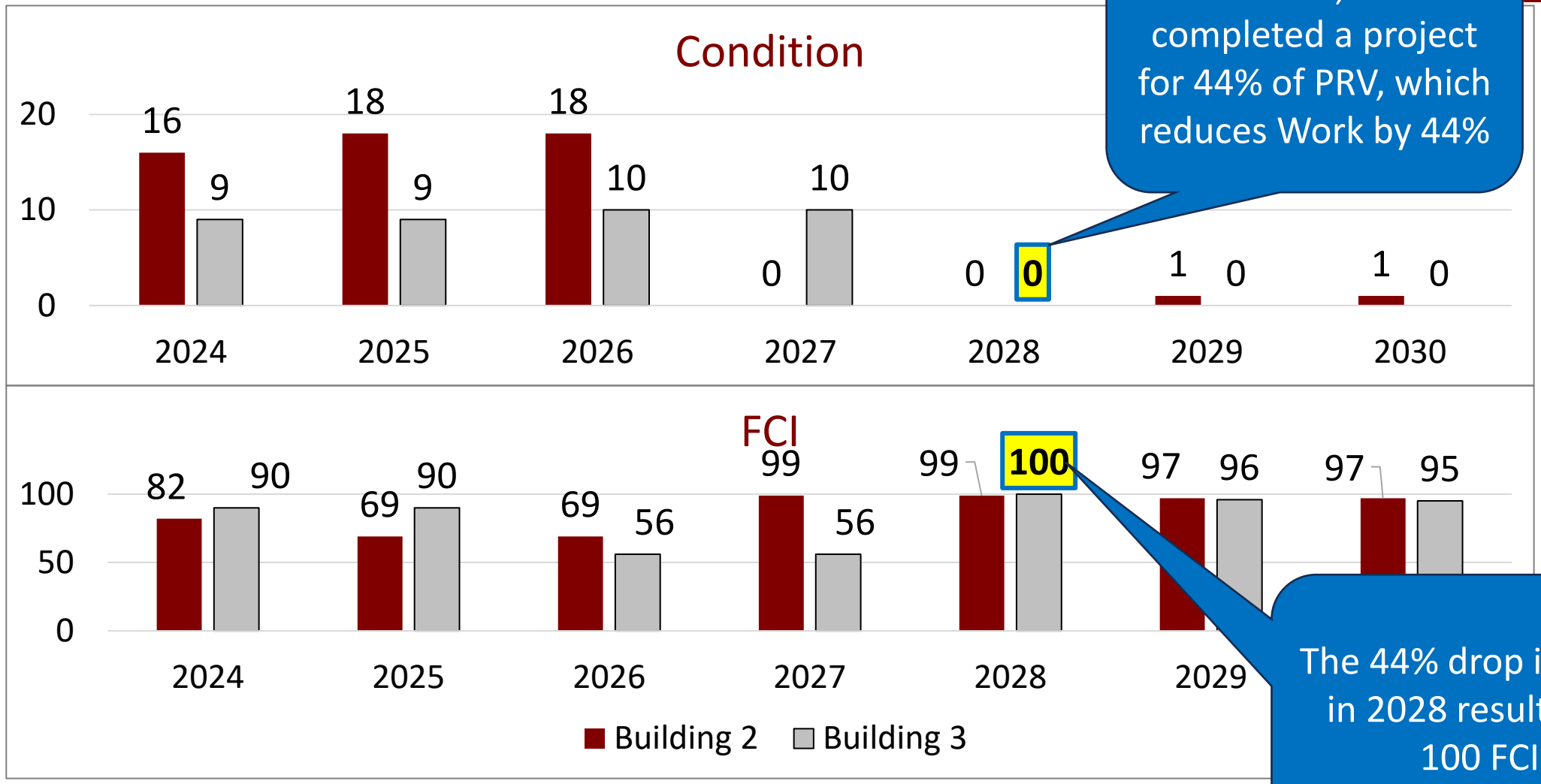


In 2027, Red completed a project for 31% of PRV, which reduces Work by 31%

In 2029 there is a 1% drop in condition

The 1% drop in condition in 2029 means an additional 1% PRV Work in 2027

The Results of the Red Process

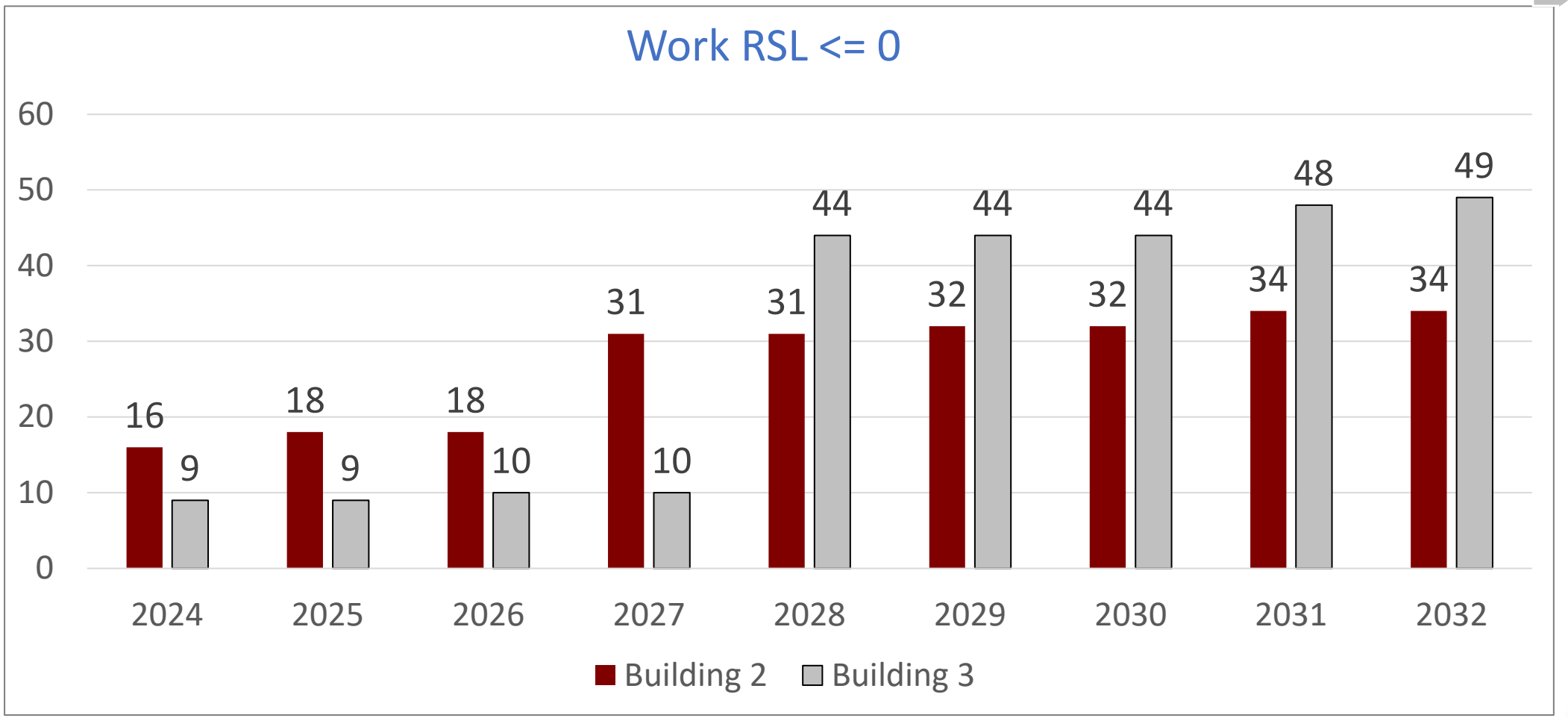


In 2028, Red completed a project for 44% of PRV, which reduces Work by 44%

The 44% drop in Work in 2028 results in a 100 FCI

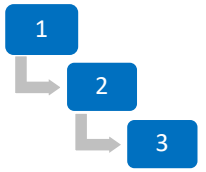
Blue Process for Buildings 2 and 3

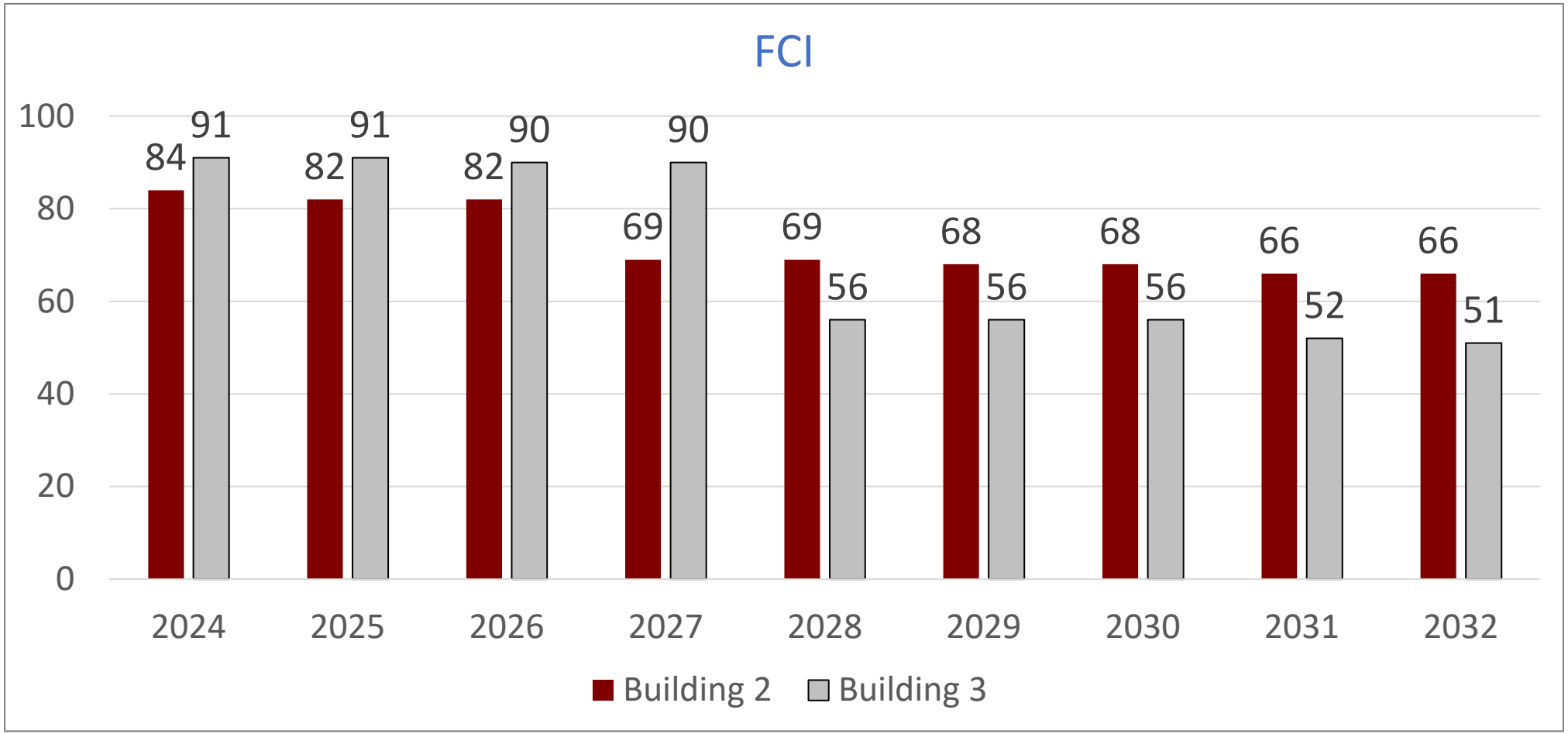
Impact of the Blue BUILDER Settings



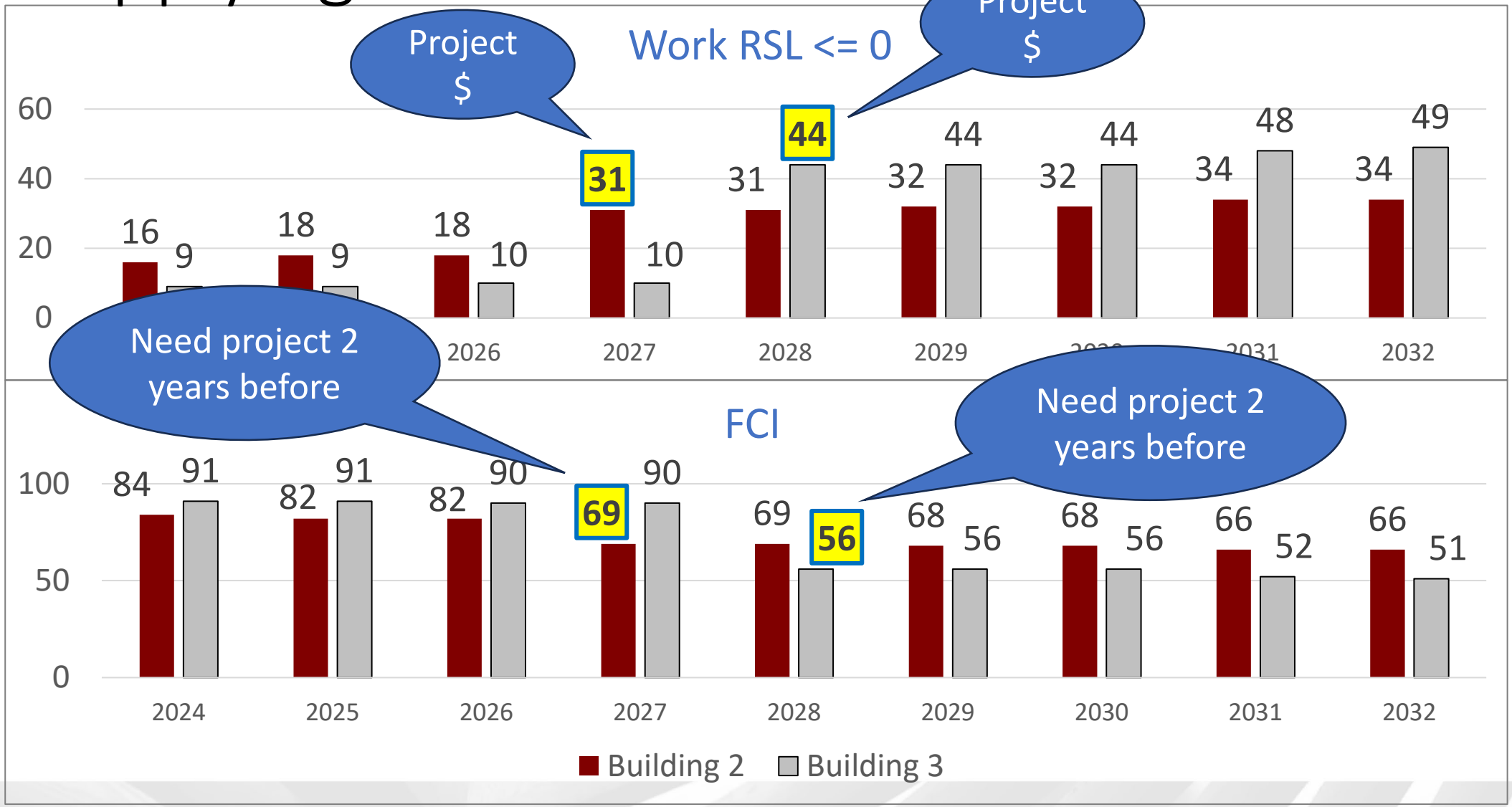
No shift with a Max RSL for Replacement of 0.

Using BUILDER's Scenario to Get FCIs

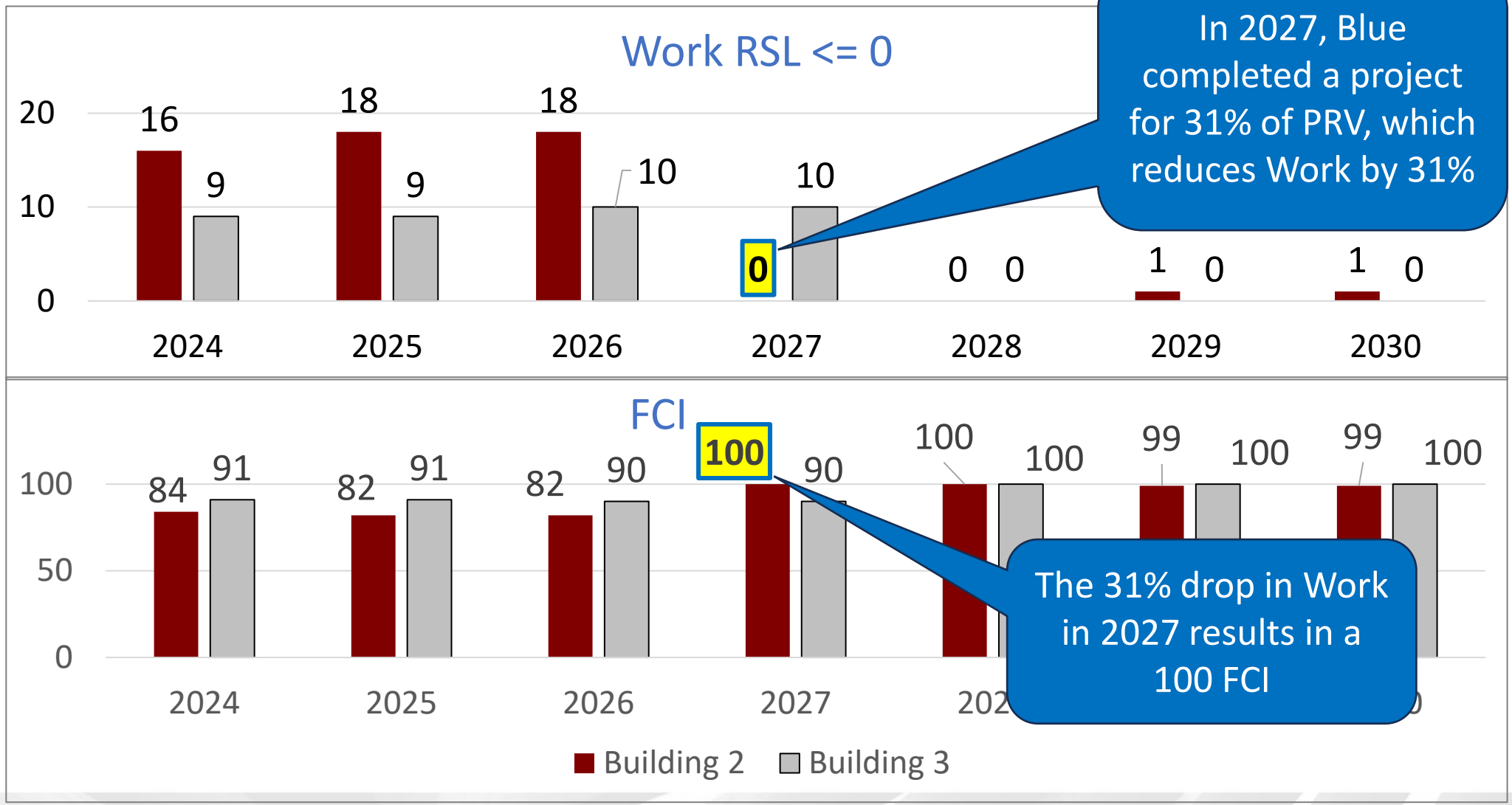




Applying the Blue Process



The Results of the Blue Process



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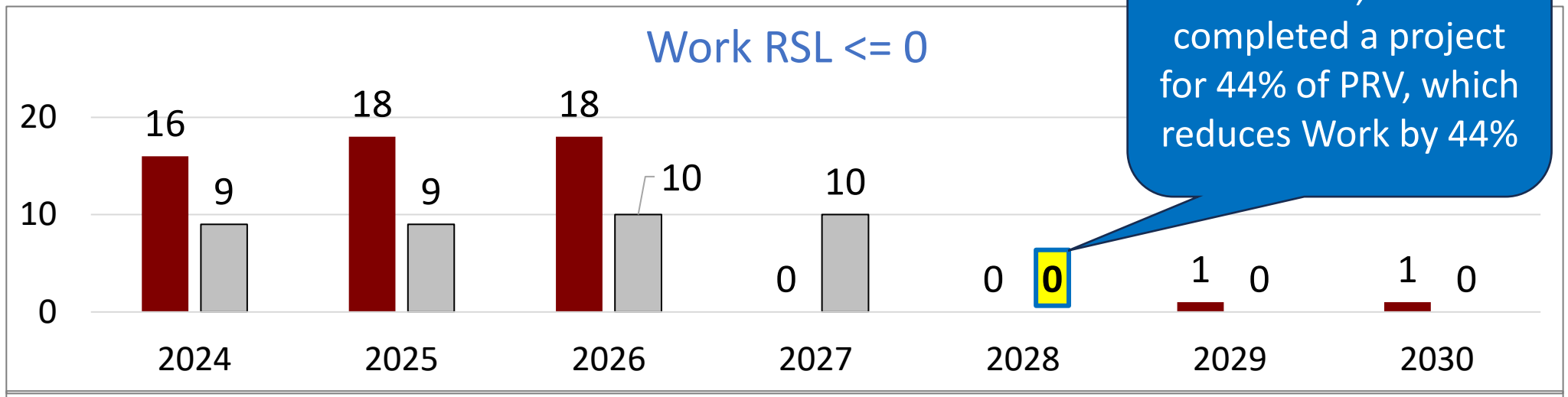
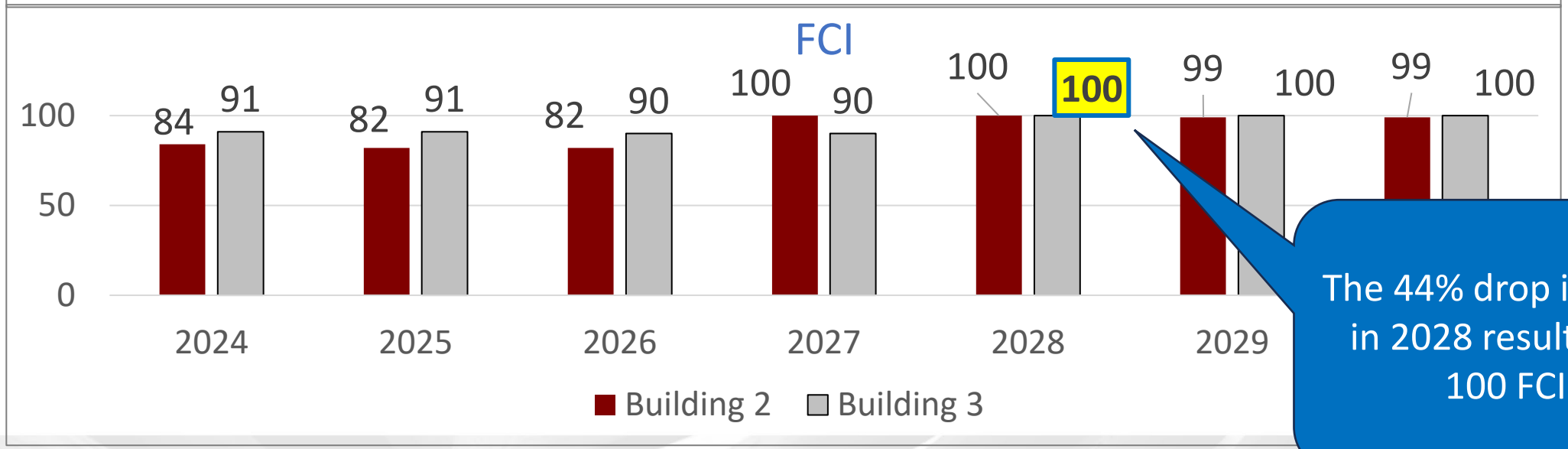
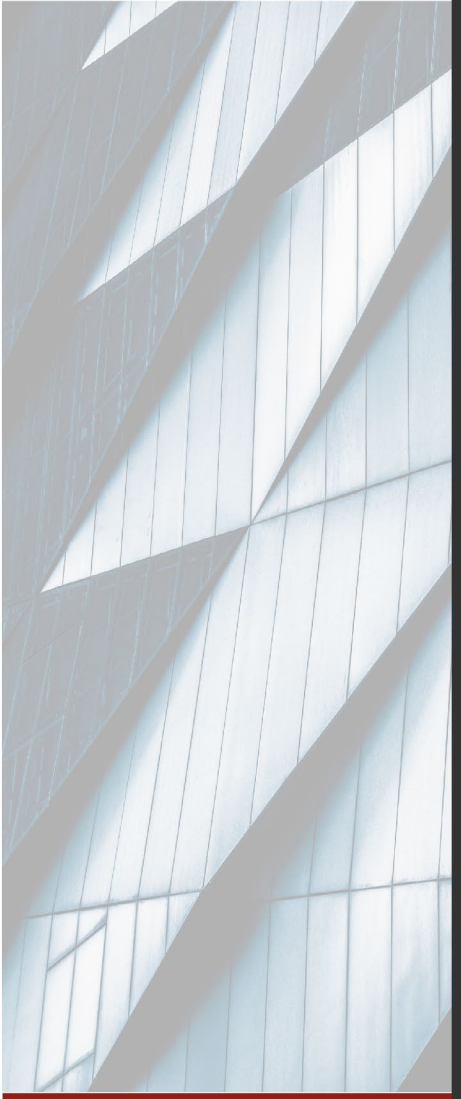




In 2028, Blue completed a project for 44% of PRV, which reduces Work by 44%

The 44% drop in Work in 2028 results in a 100 FCI

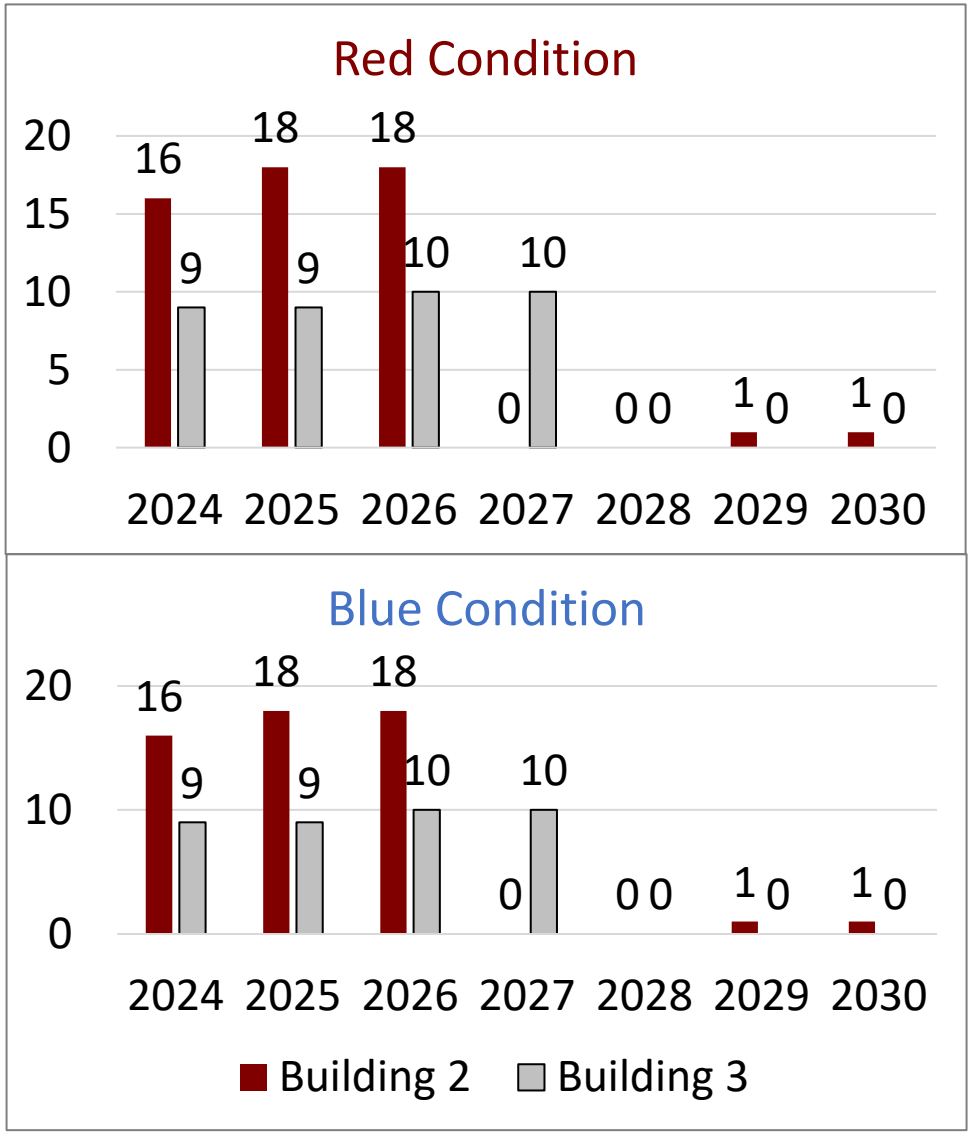


Comparison Buildings 2 and 3

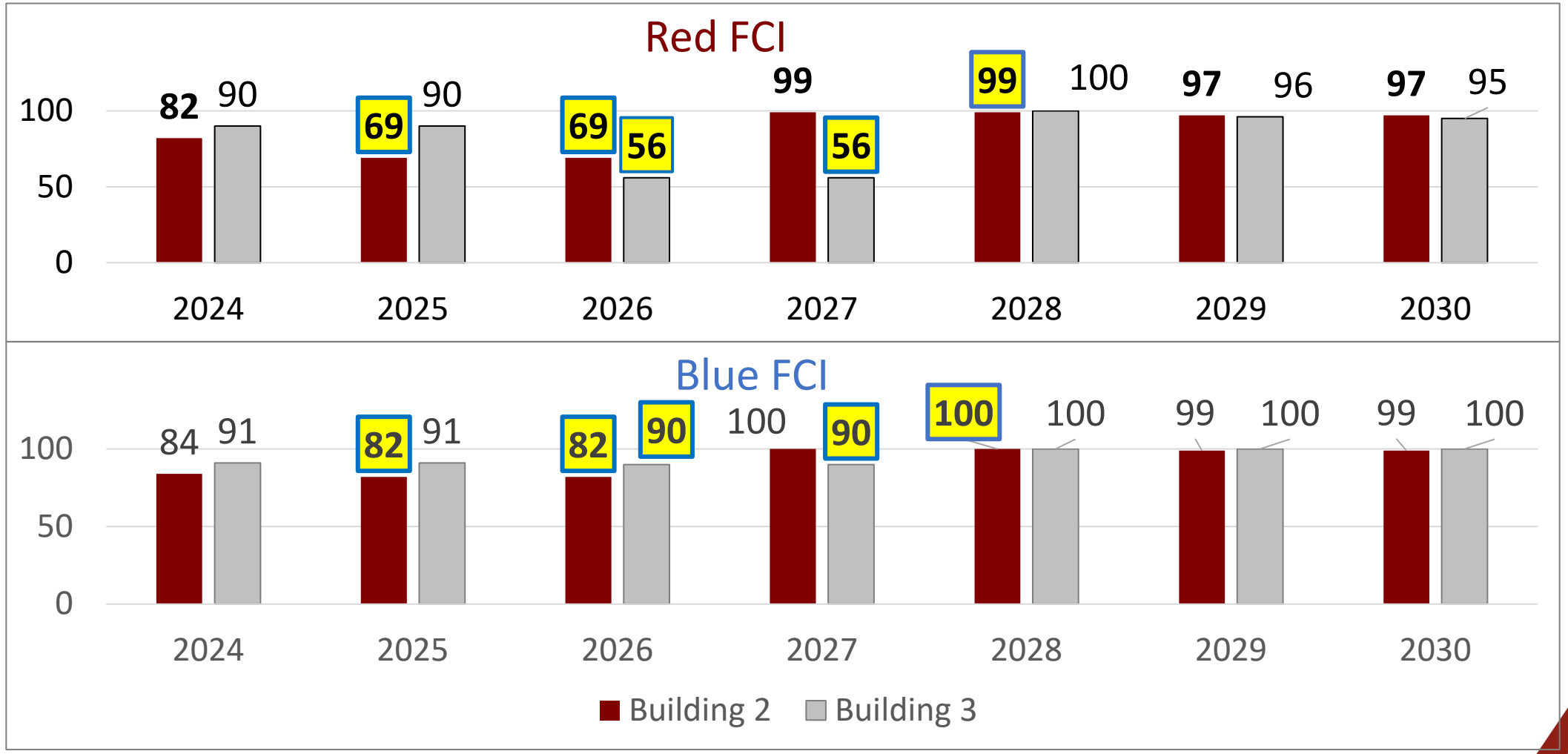
Results

Both Projects:

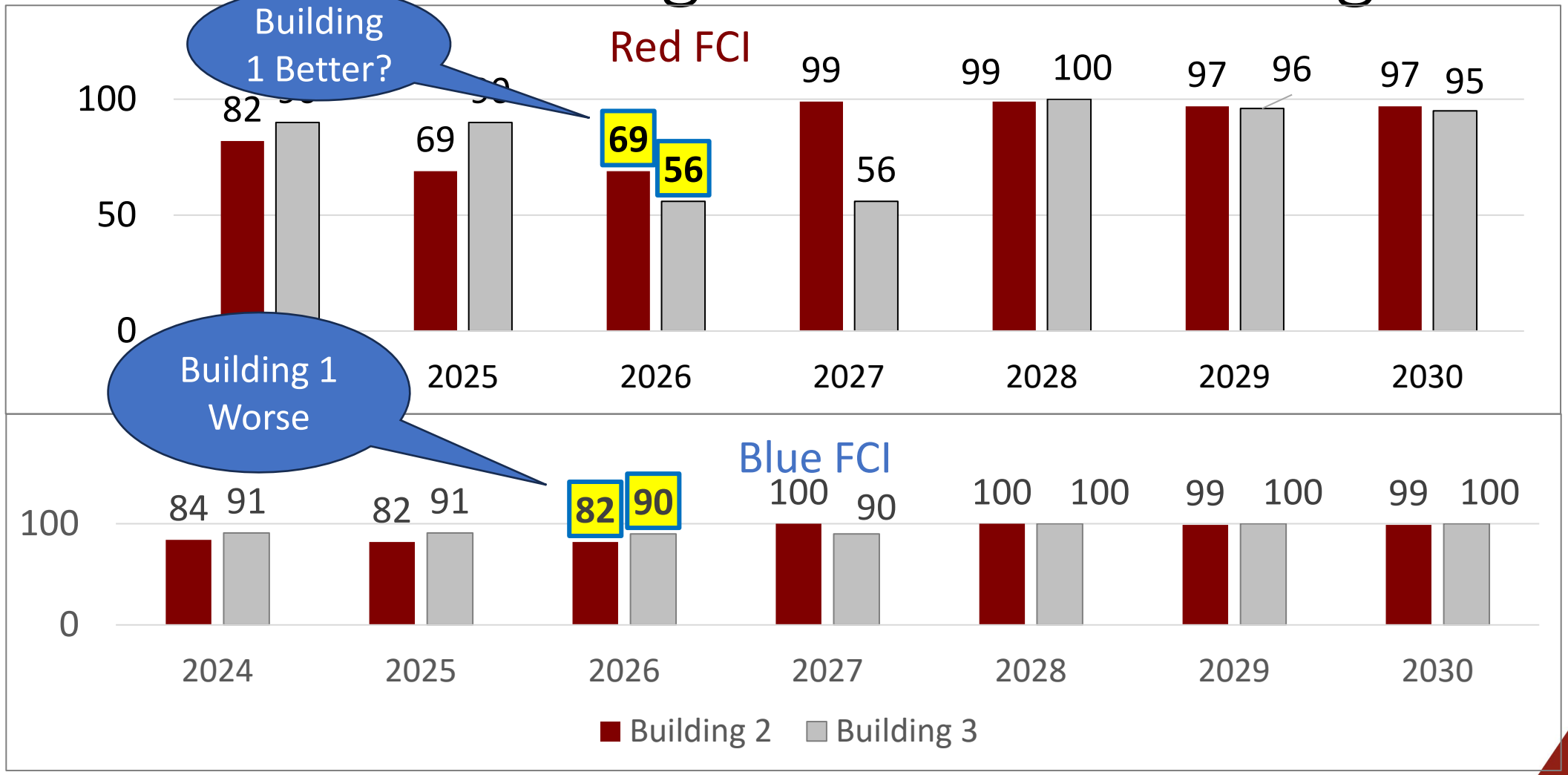
- Projects identified in 2025 and 2026.
- Project fixed 31% and 44% of PRV.
- The buildings were in the exact same condition for all years.



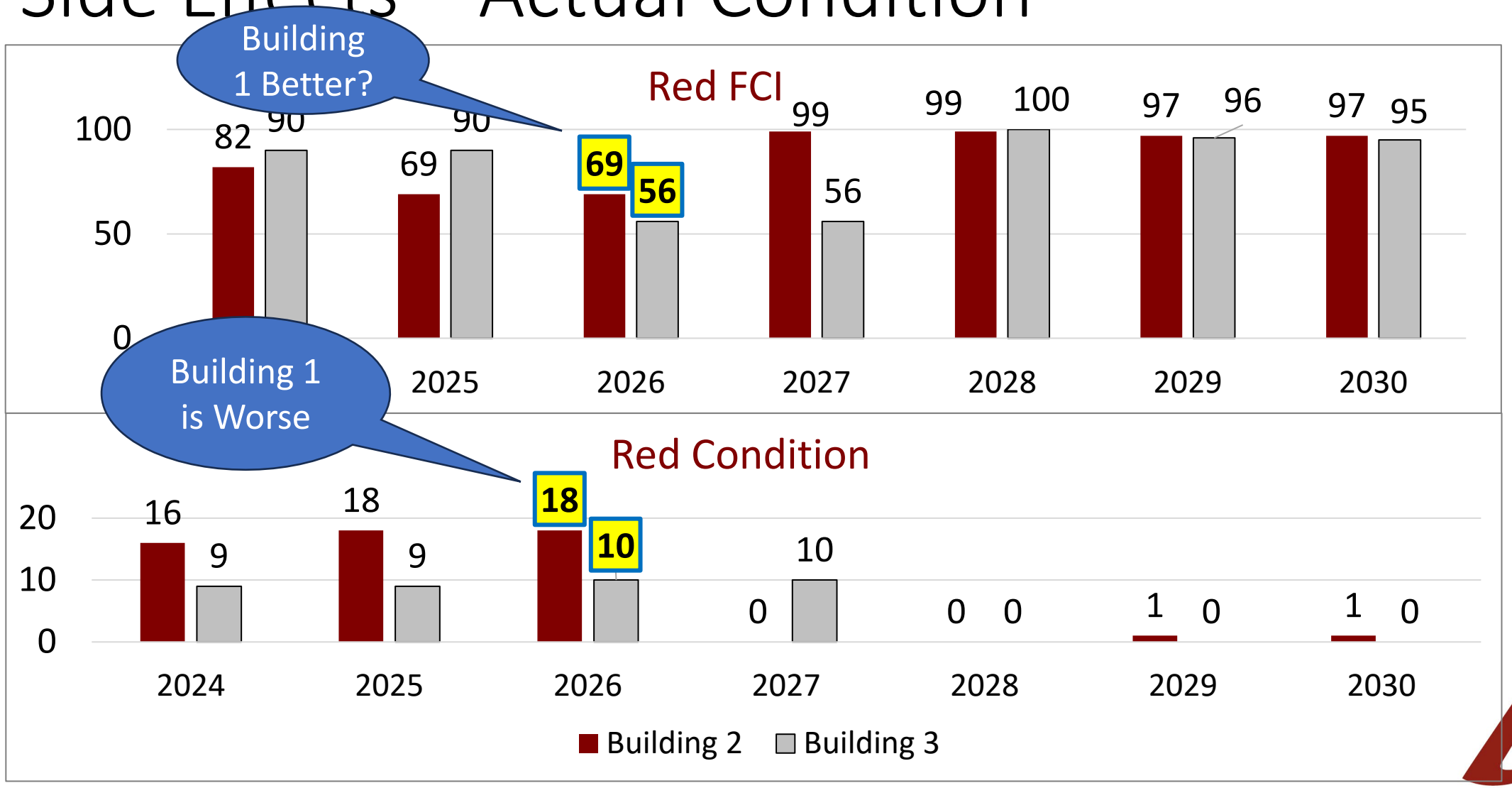
Side Effects – Difference in FCIs

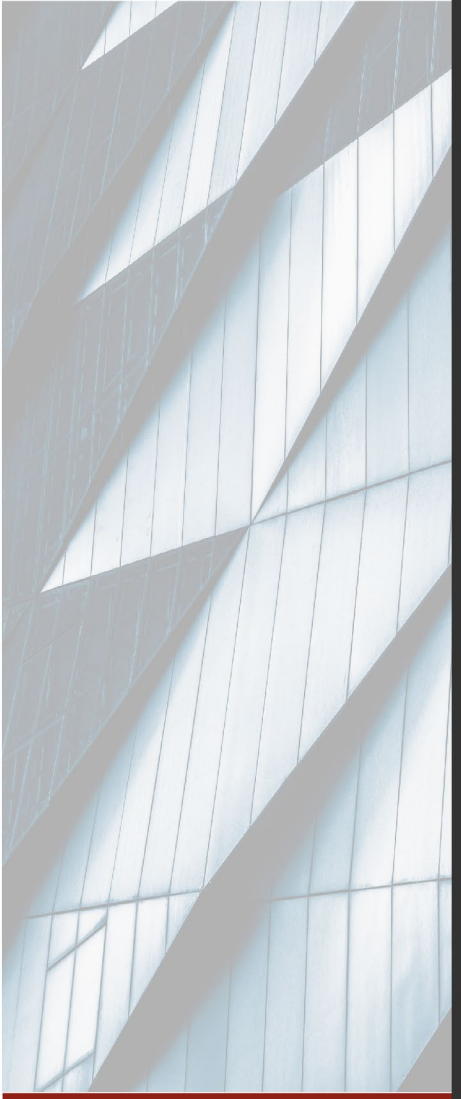


Side Effects – Fixing the Better Building?



Side Effects – Actual Condition

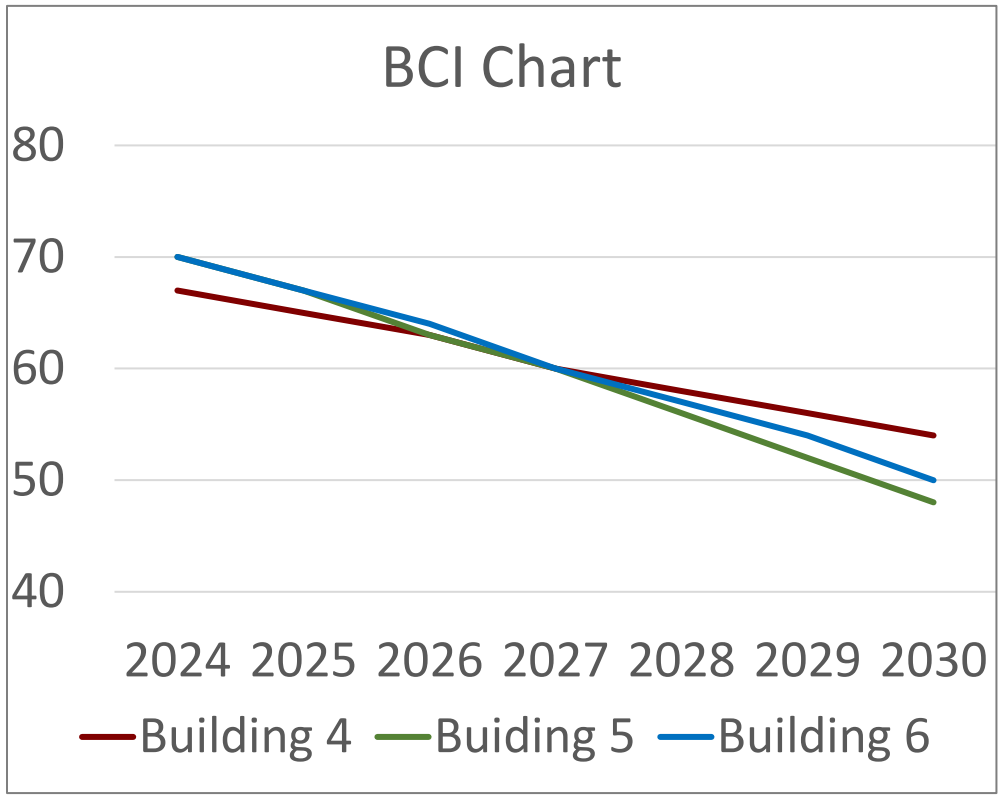




BCI

BCI

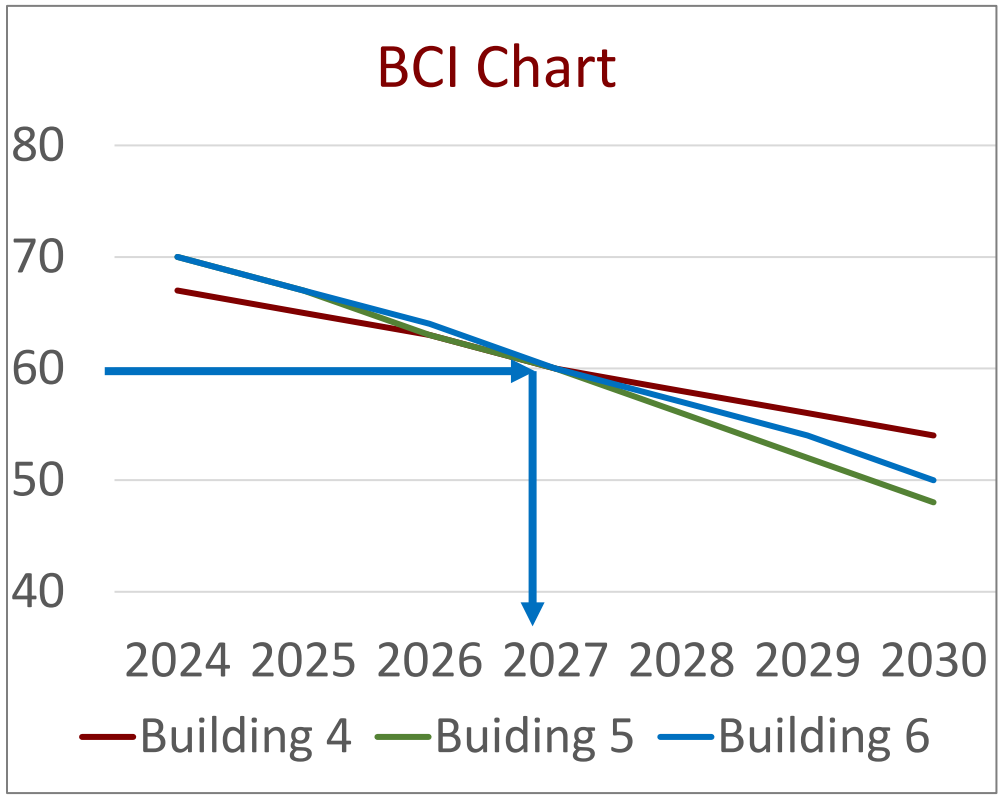
- There are no settings if your process uses BCI.
- Buildings with the same BCI typically only have it at that year.
- Have different BCIs before and after that point



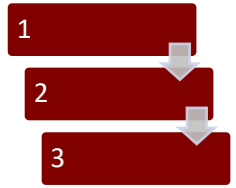
Red BCI Process

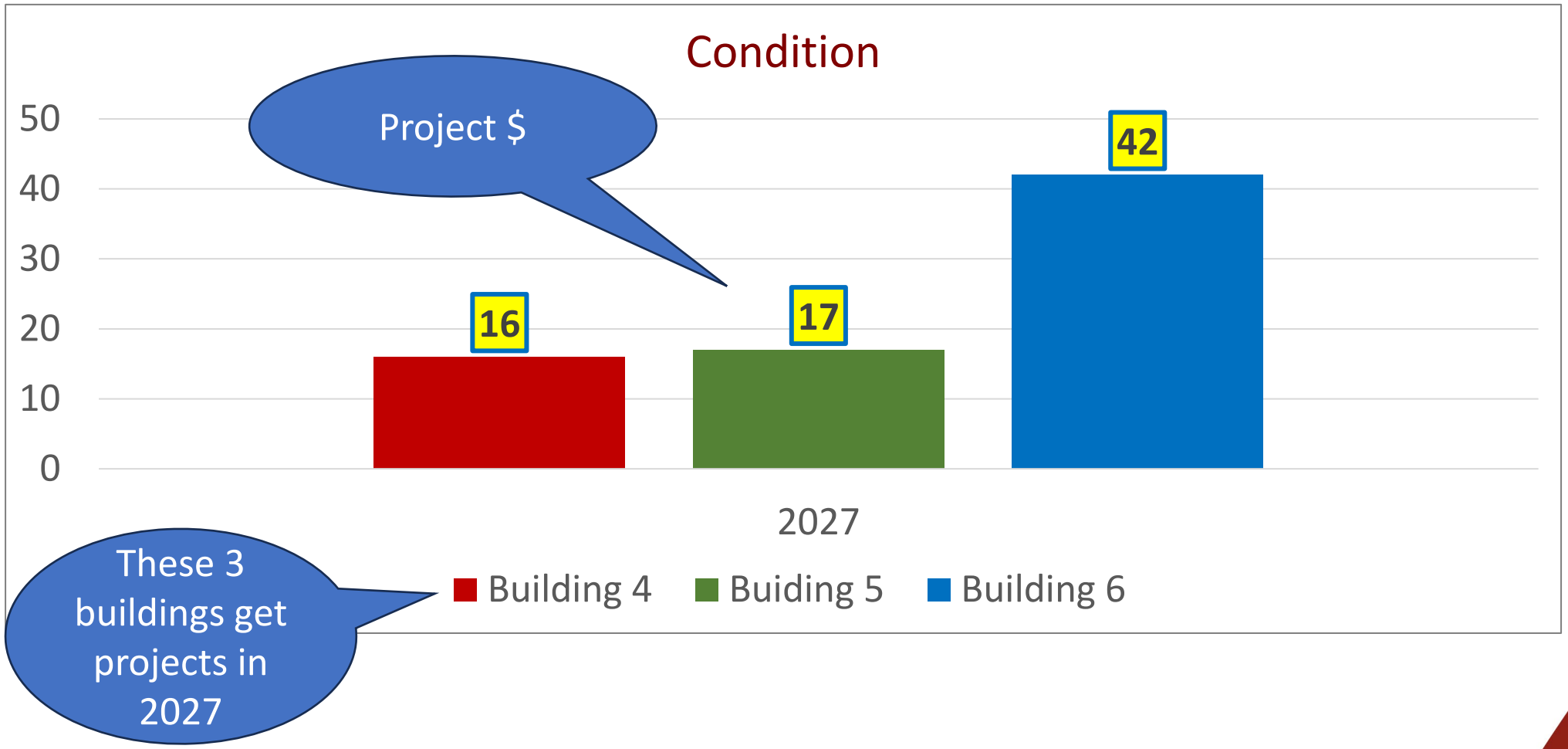
Red Process

- Red likes to use current values.
- Create projects when the BCI equals or drops below a threshold – 60 for example.
- In 2027, all three buildings are at a 60, so Red creates projects for all three buildings in 2027.

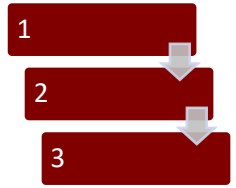


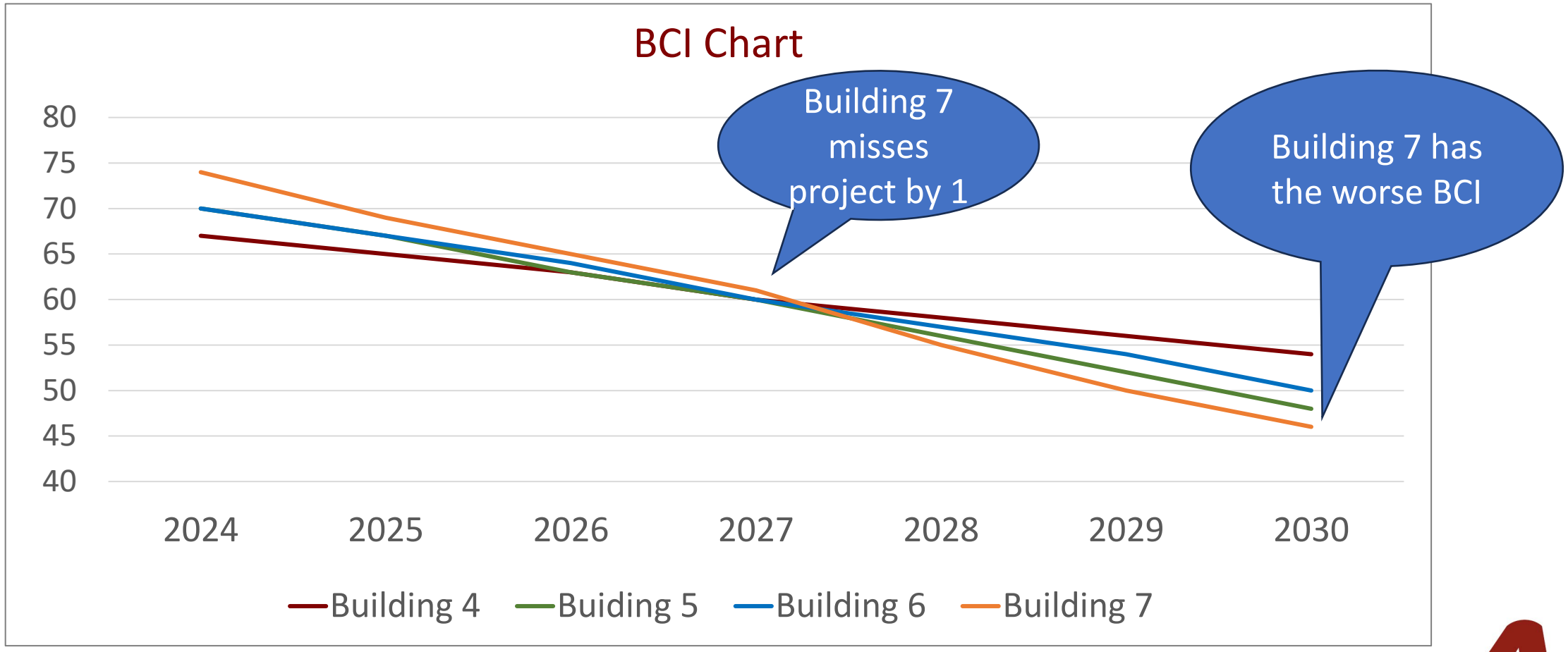
Red Process


1
2
3

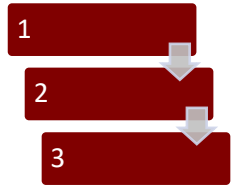

Condition
Project $
50
40
30
20
10
0
16
17
42
2027
Building 4
Buiding 5
Building 6
These 3 buildings get projects in 2027

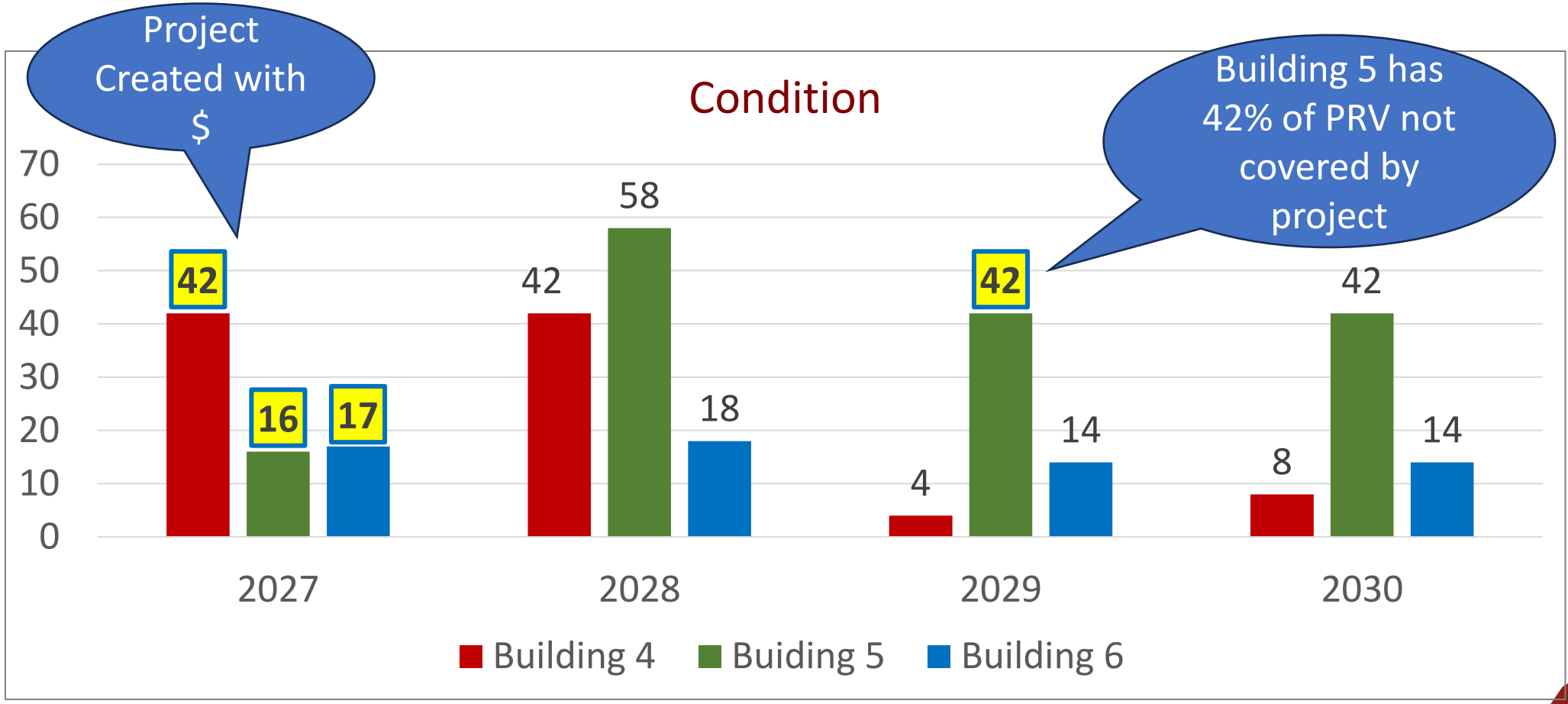
Side Effects of the Red Process





Side Effects of the Red Process

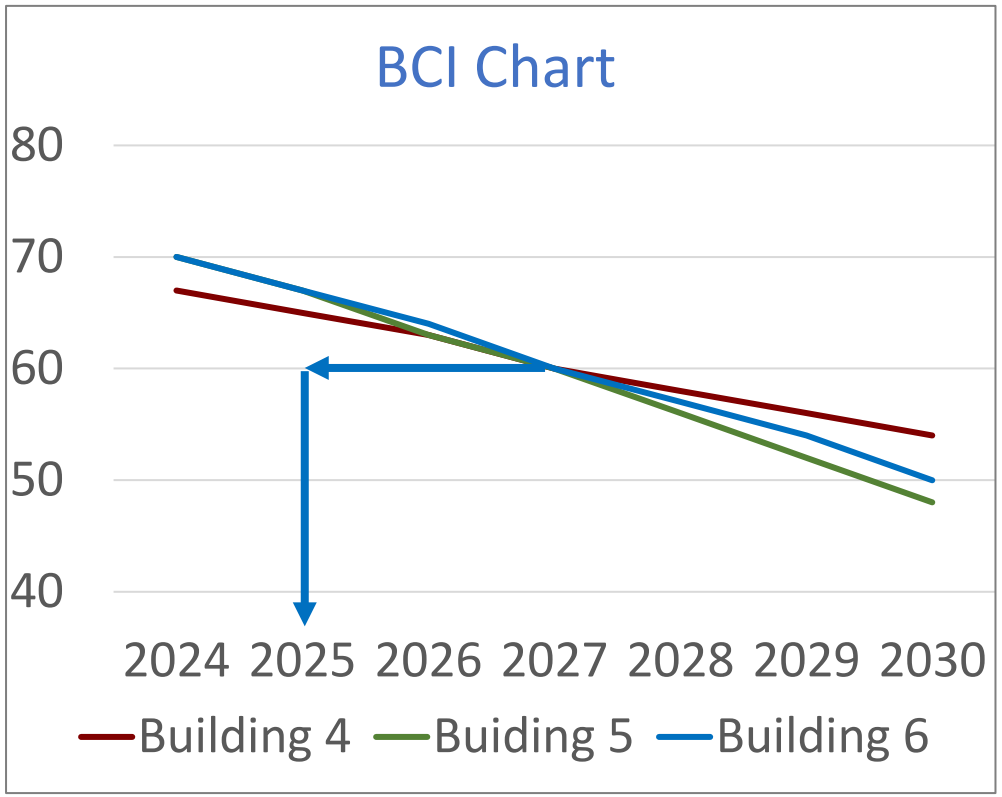




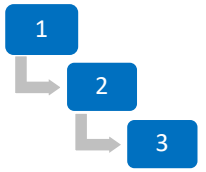
Blue BCI Process

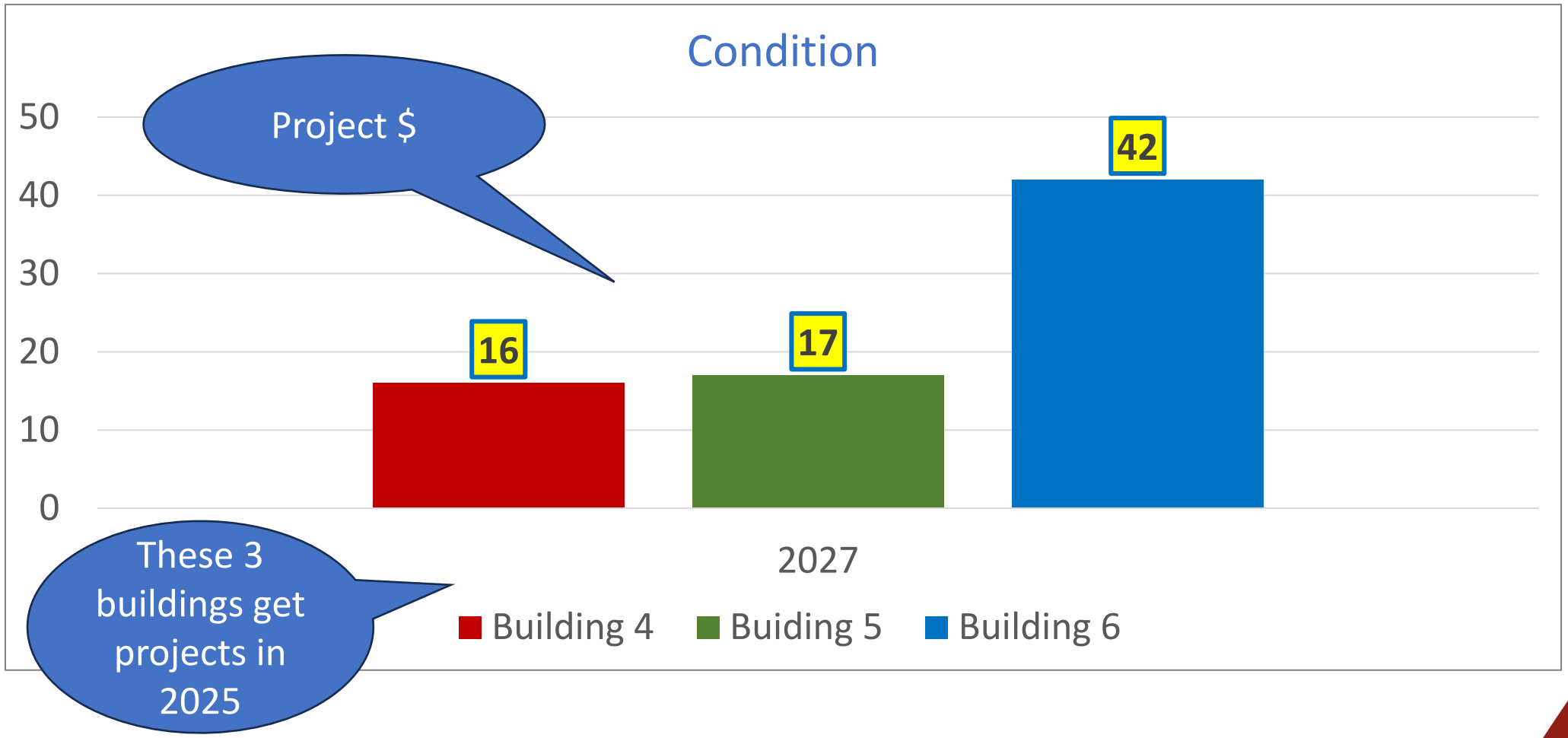
Blue Process

- Blue likes to use forecast values.
- Create projects when the BCI equals or drops below a threshold – 60 for example two years from now.
- In 2027, all three buildings are at a 60, so Blue creates projects for all three buildings in 2025.

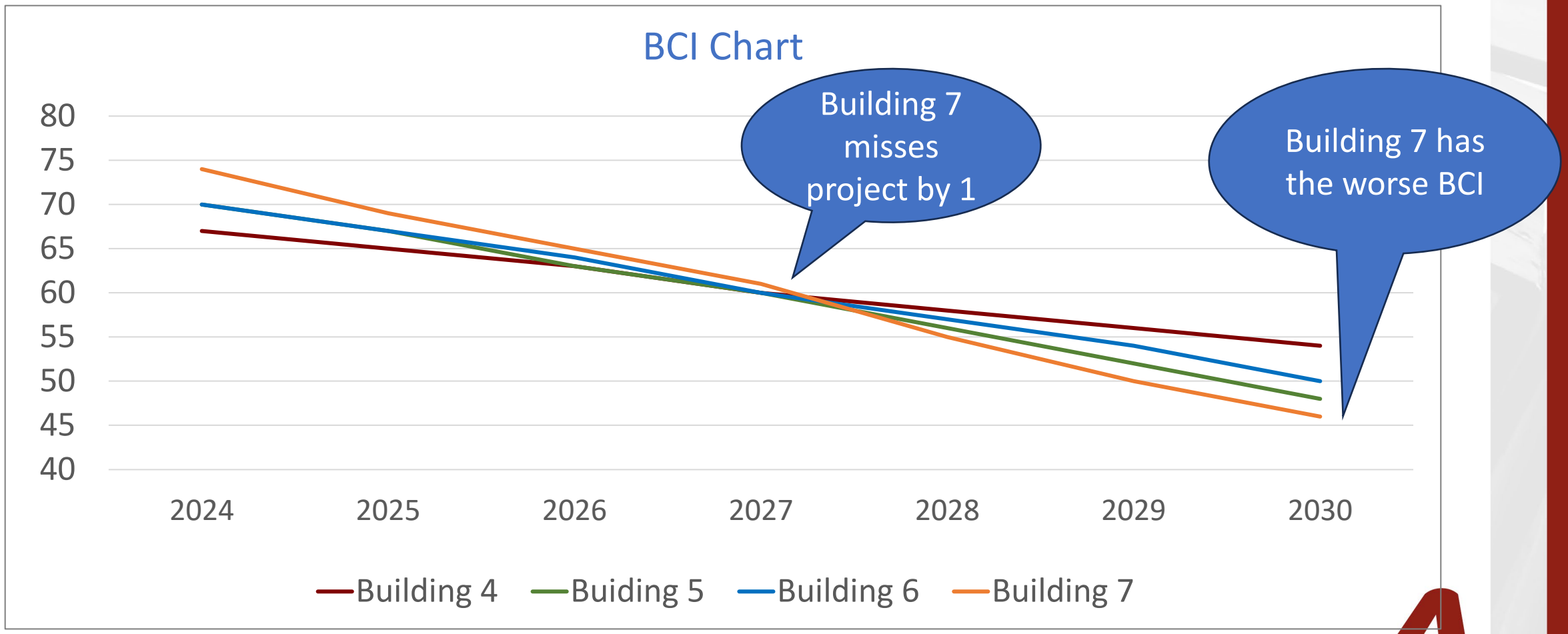


Blue Process

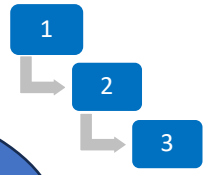


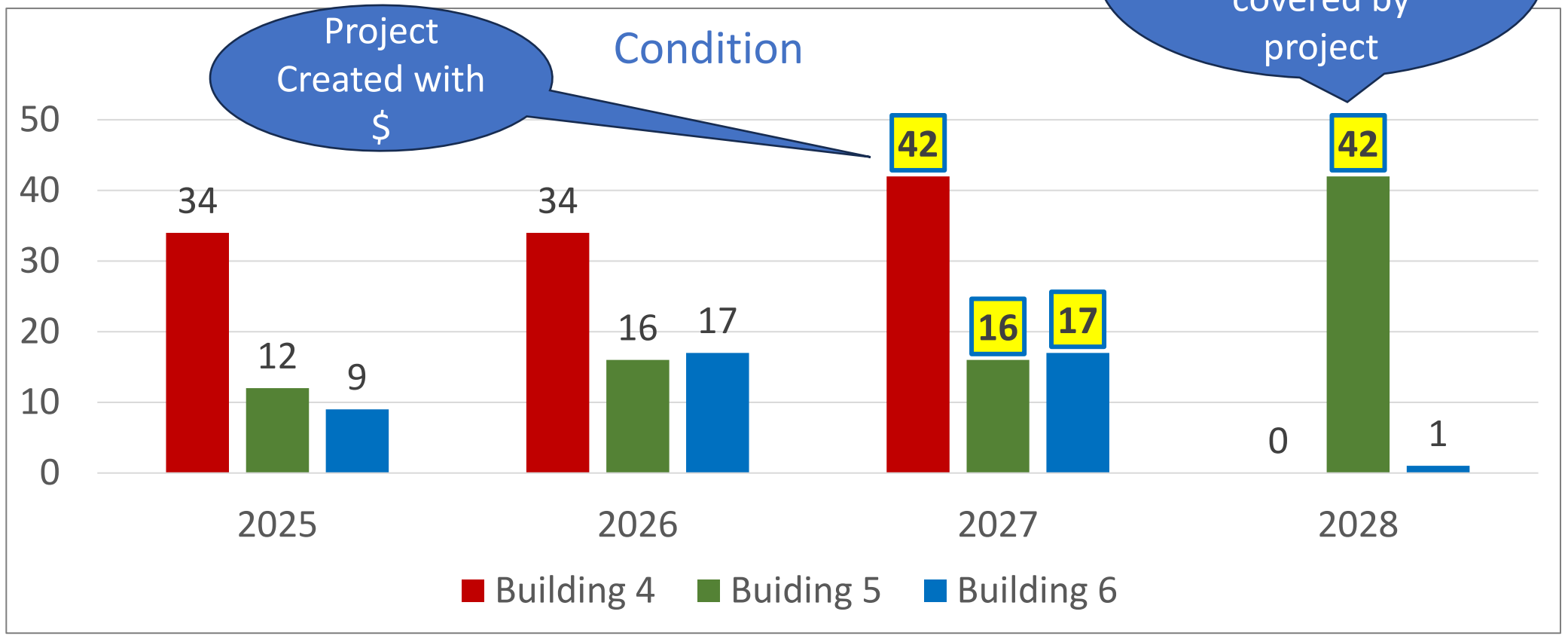


Side Effects of the Blue Process



Side Effects of the Blue Process

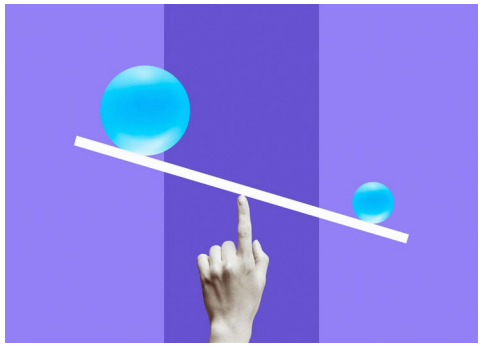




BCI Comparison

Comparison

- Both processes created projects for the same amount.
- Both processes created the projects at different times.
  - Hard to directly compare the results.
- Both processes left Building 5 in bad shape in 2028 with 42% of the PRV with an RSL <=0.
  - Take more calculations and a more complicated process to determine if there would be a project in either process to address the Building 5 issue.

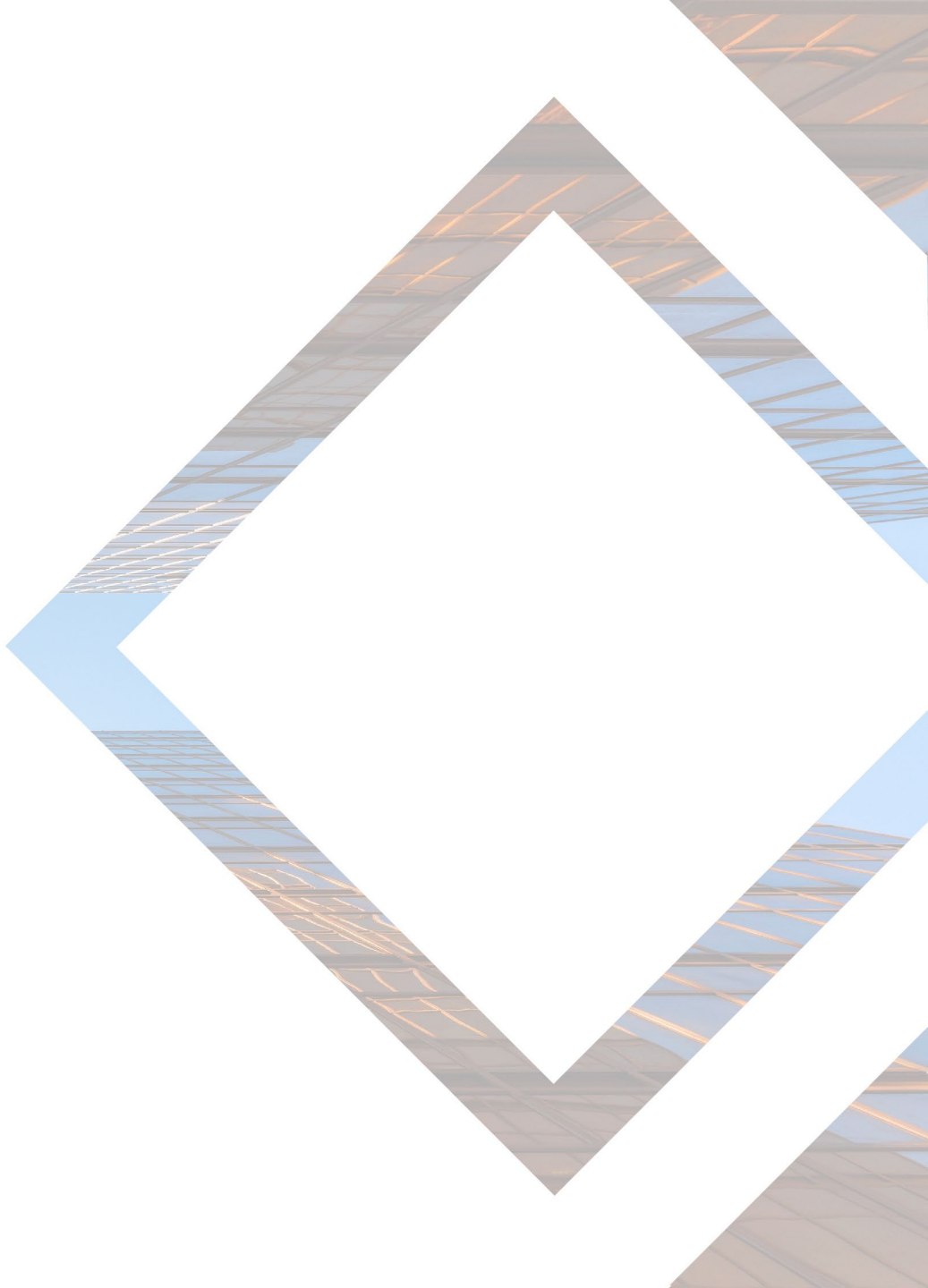


Conclusion

Conclusion

- Possible to have 2 different process and settings produce the same physical results.
- With ESMS just around the corner it is a good time to think about:
  - Are you happy with your process?
  - Do your settings compliment your process?
  - Do you know the side effects of your process?
  - Are you OK with the side effects of your process?
  - How will you need to adjust your process and settings in ESMS?

Thank You!



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