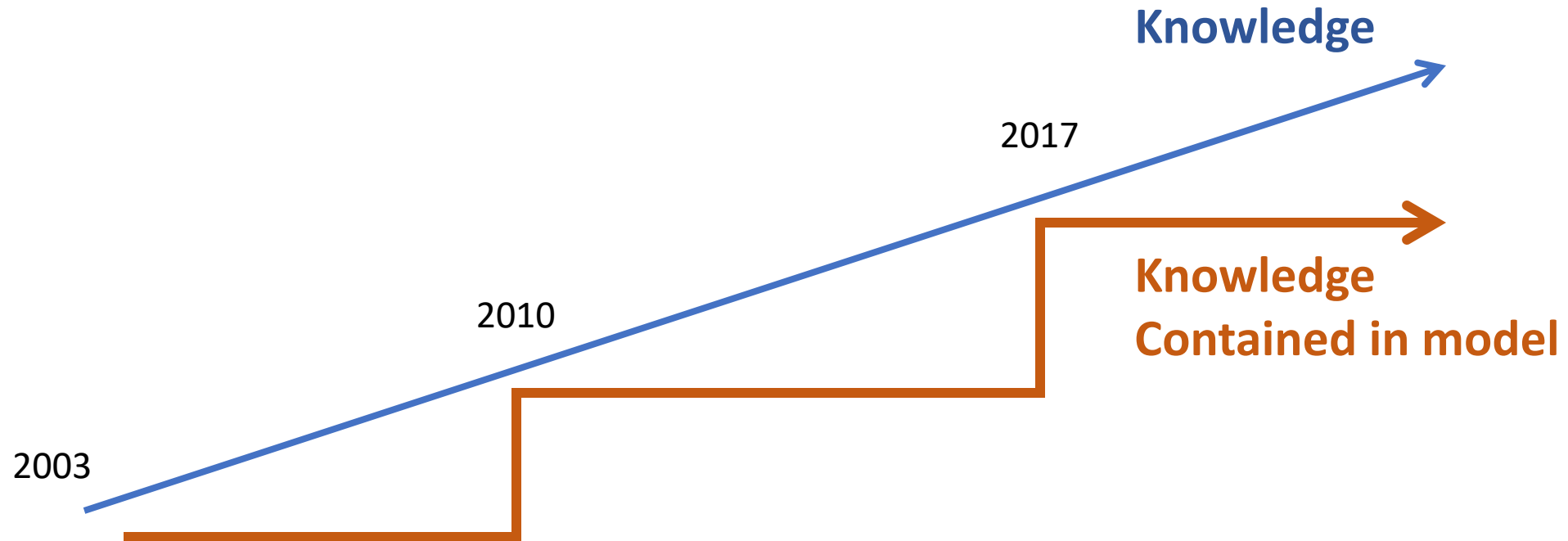


# CAST-21

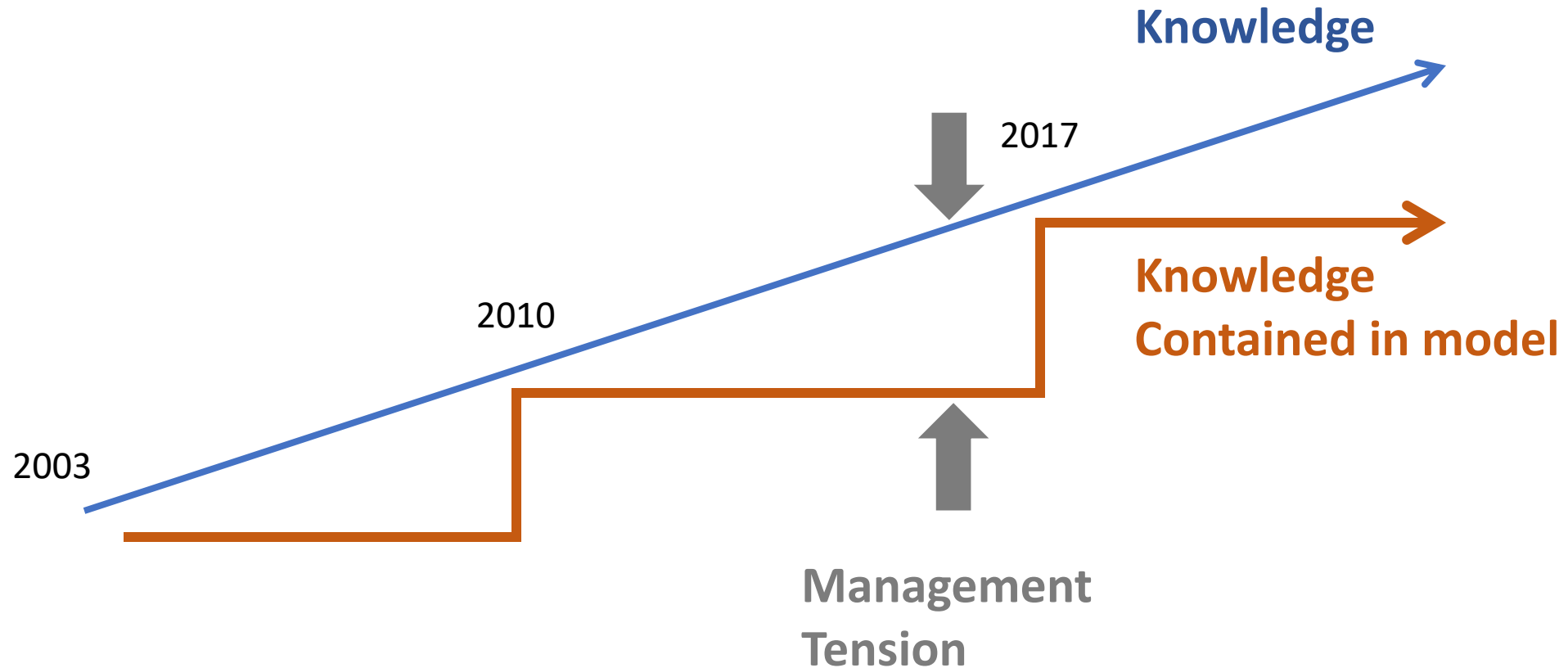
CBPO Staff

# Always improve and Never Change



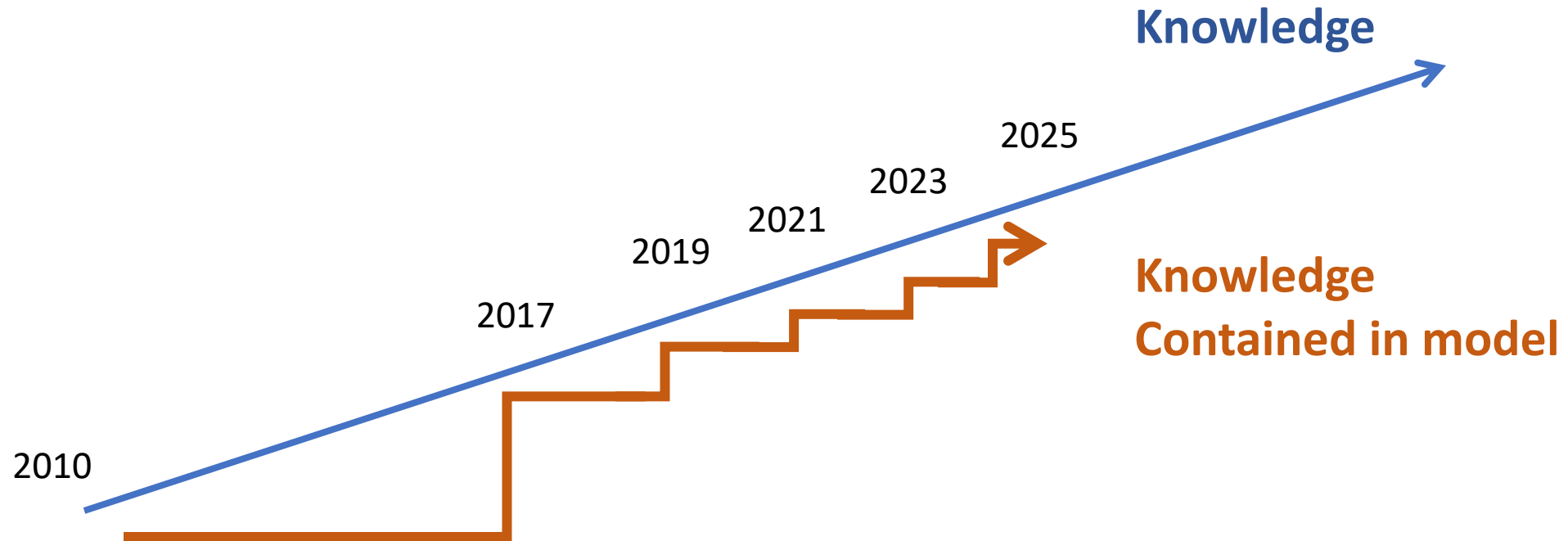
CBP history – long periods of model stability

# Always improve and Never Change



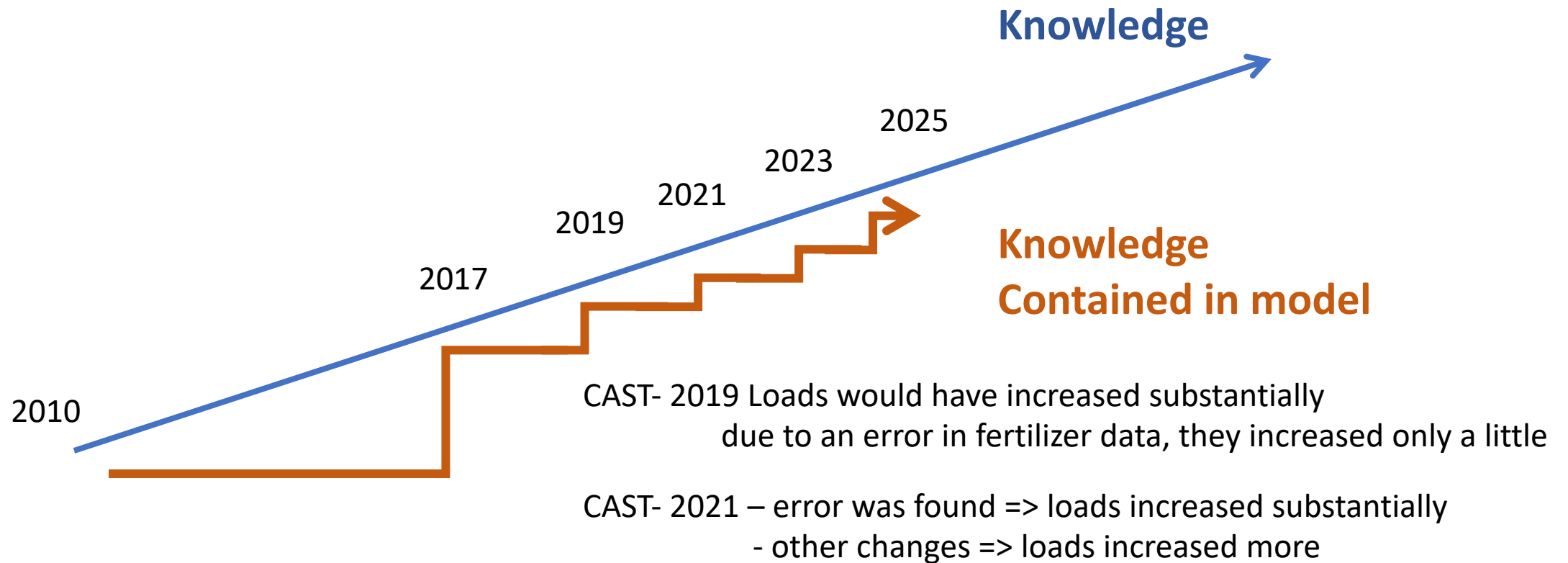
CBP history – long periods of model stability

# Always improve and Never Change



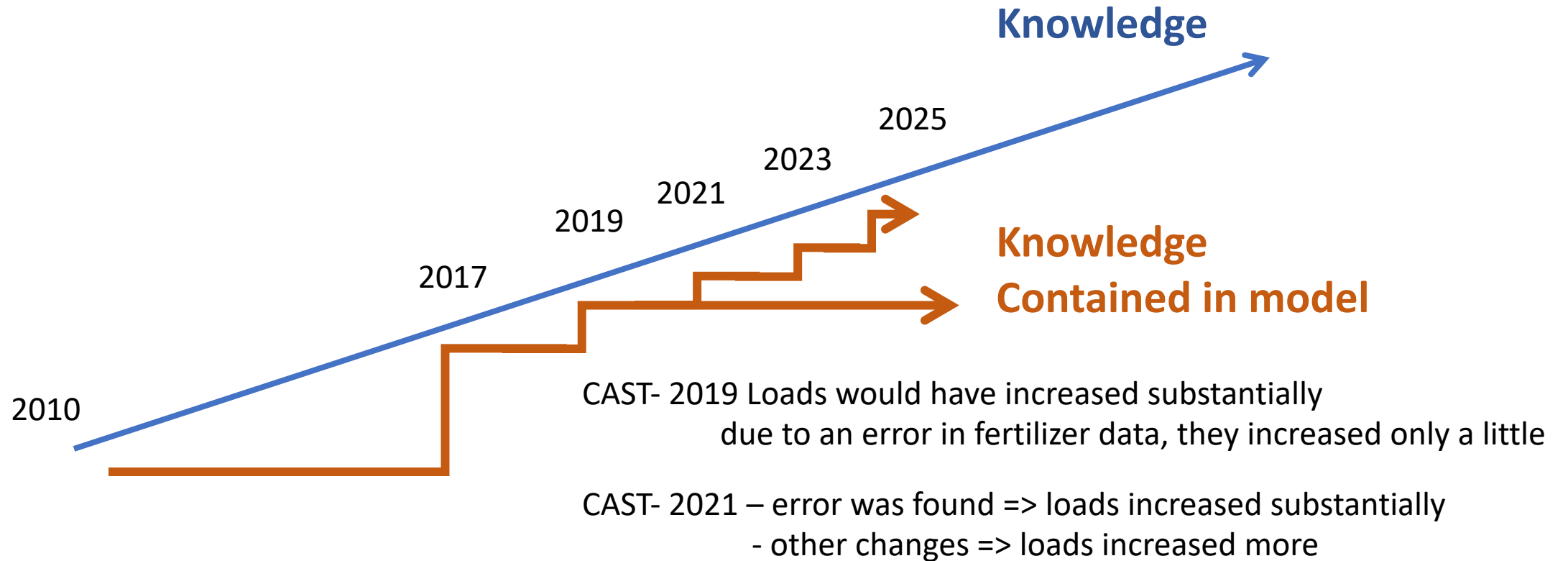
Phase 6 plan – update models every 2 years

# Always improve and Never Change



Phase 6 plan – update models every 2 years

# Always improve and Never Change



Partnership discussion about whether to move forward with new model

Phase 6 plan – update models every 2 years

# STAC EB Opinion

- “The STAC Executive Board, on behalf of STAC, supports the updates to CAST, as embodied in CAST-21, including the correction of the fertilizer data from 2013-2014. The incorporation of the best available information, using standard operating procedures agreed upon by the partnership, is a central tenet of how the work of the CBP proceeds. STAC recognizes that there are consequences of the 2-year delay in the realization of the error in the fertilizer data to partner members. The partnership may wish to consider changes to management expectations in light of this delay, but STAC supports the transparency of the best available science.”

# Principals' Staff Committee – August 29, 2022

## Decision 3

- Partners expressed an interest in ensuring steps are taken to avoid data analysis errors in the future and to have a process in place to evaluate the reasonability of modeling results once the CBP protocols are applied.
- Decision: The partnership will update the process for incorporating data into CAST to include **additional safeguards** to **prevent** data analysis **errors** and to assess reasonability of modeling results after CBP protocols are applied.
- Action: The Management Board will determine the appropriate existing GIT and/or workgroup, to develop proposed solutions including additional safeguards to prevent data analysis errors and to assess reasonability of modeling results after CBP protocols are applied.



# Principals' Staff Committee – August 29, 2022

## Decision 2

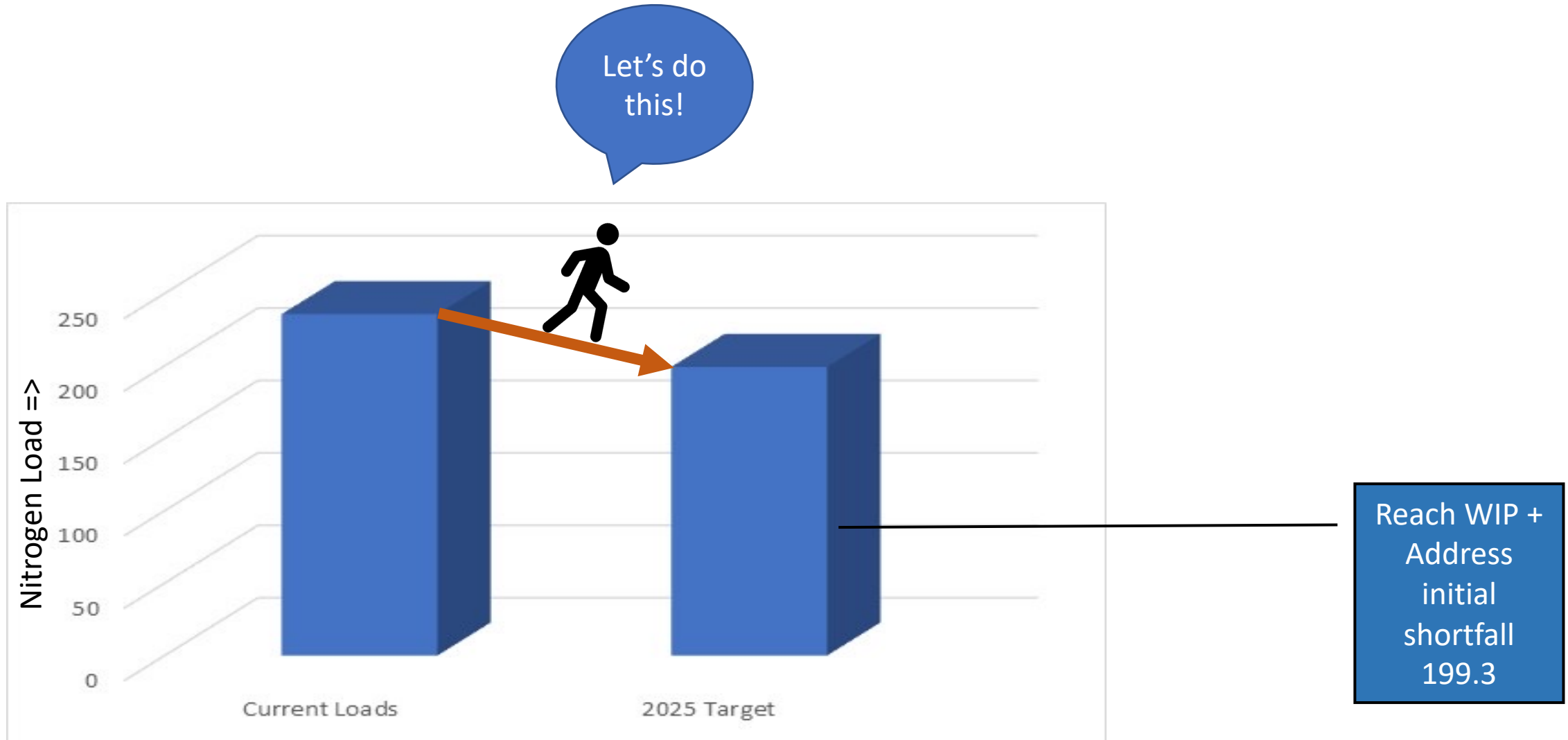
- Address Fertilizer Issues
- States lack confidence in the fertilizer sales data in accurately describing current fertilizer use. The PSC discussed both **short- and long-term** ways to resolve the concerns.
- **Decision:** The partnership will convene a **committee** to develop short-term, interim resolutions to **fertilizer data concerns** before moving forward with CAST 2021 as well as long-term resolutions for Phase 7 model. The committee will report out on progress towards this action at the next PSC meeting.

# Principals' Staff Committee – August 29, 2022

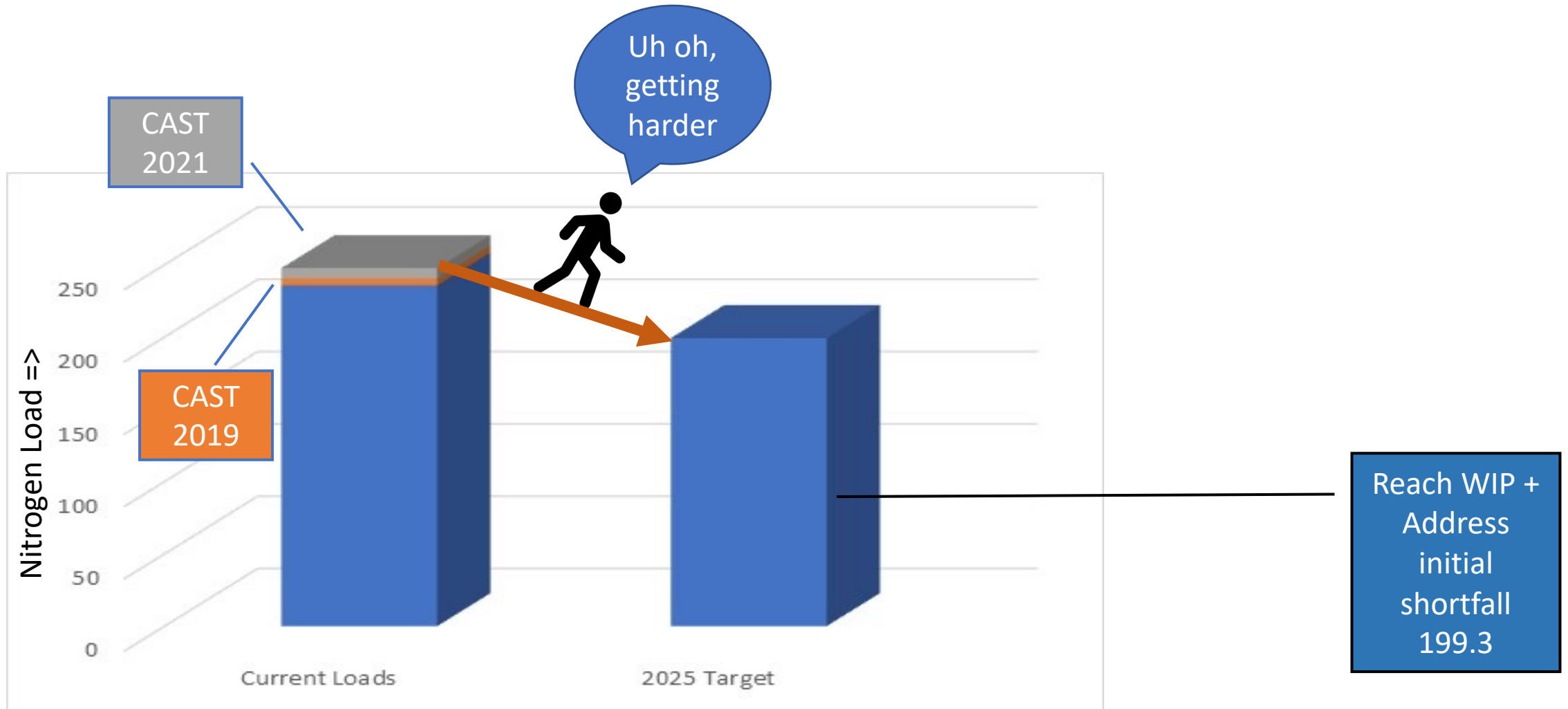
## Decision 1

- Address Unaccounted Additional Loads Post-2025
- Multiple factors have been identified which create greater than expected loads in the updated CAST. During this meeting the PSC discussed the best way to address these new challenges as we approach 2025.
- Decision: Over the next year, as a partnership we will figure out how the **unaccounted additional loads are addressed post-2025** and on what timeframe as we work to 'recalibrate' the goal line.

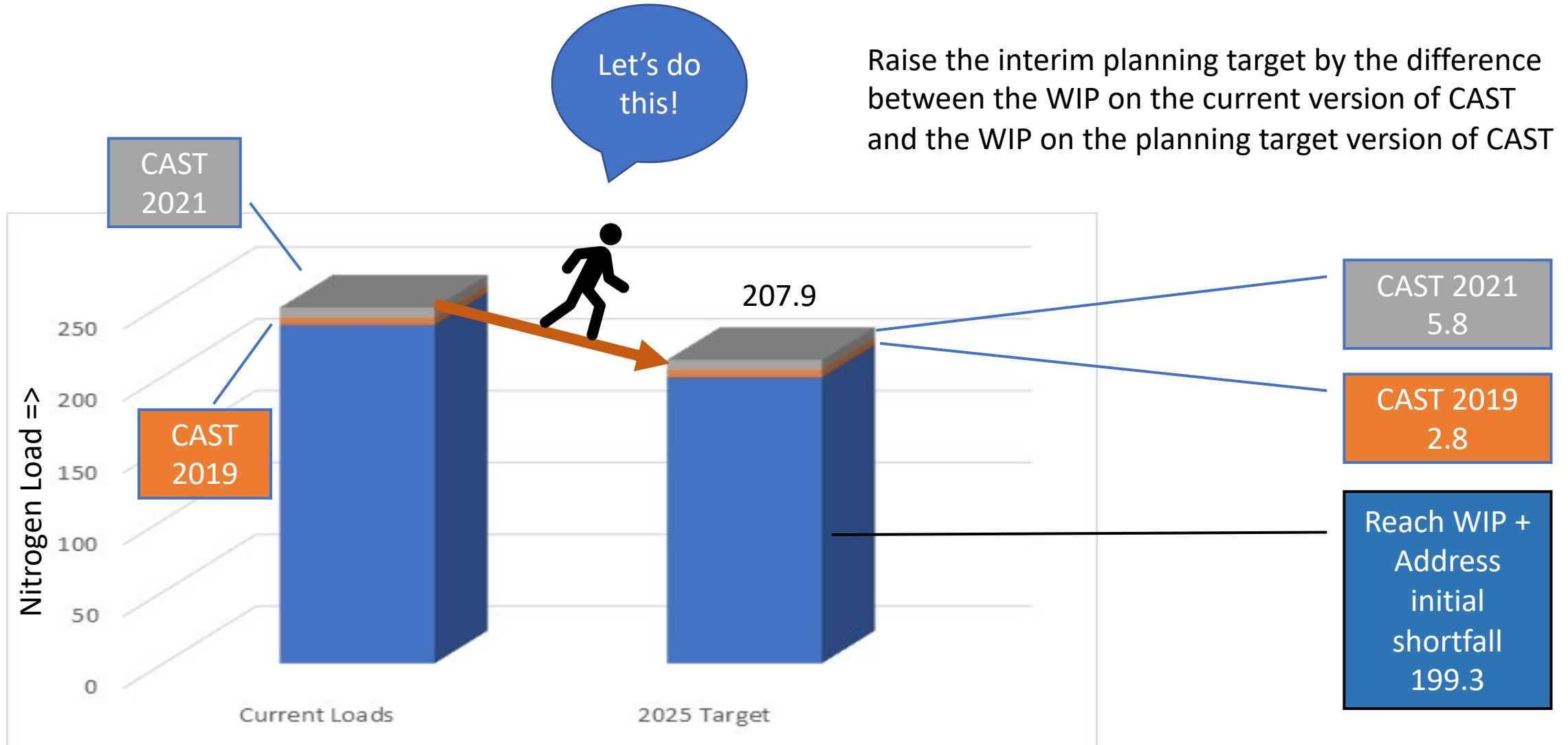
# Original Phase 3 level of effort



# New versions of CAST raised loads



# Get back to the original phase 3 level of effort



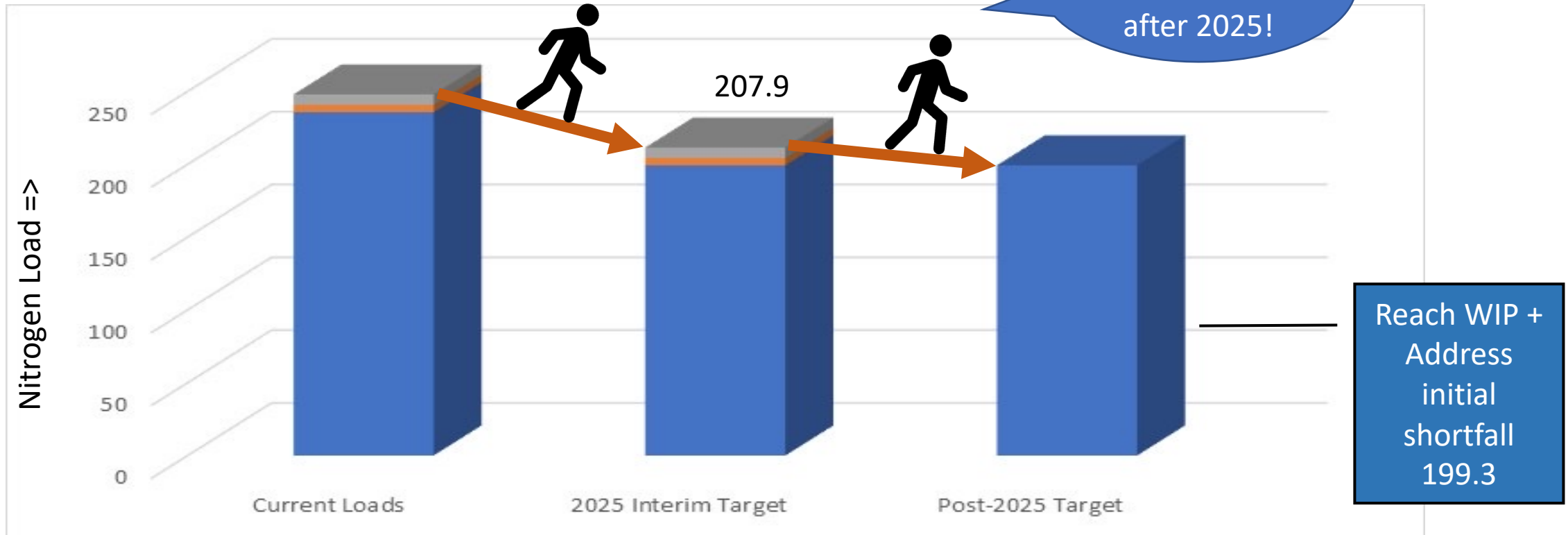
# Get back to the original phase 3 level of effort

We can claim some success in 2025 – We achieved what we said we would do in our WIPs.

Let's do this!

We will address the unexpected loads after 2025

Let's do this!  
...and climate after 2025!



We can move forward with CAST2021 – following partnership decisions

# Benefits of Maryland's Approach

- **Makes Good on PSC Decision** to move unexpected loads to post-2025
- **Keeps Original Level of Effort** in WIPs through 2025. We achieved what we said we'd do in our WIPs.
  - Using CAST2019 with error would be a greater level of effort.
- **Follows partnership decisions**
  - Allows CAST2021 to move forward, which represents the partnership decisions.
  - Using CAST2019 with known error is not defensible.
- **Saves Staff Time** – May simplify discussion on short-term resolutions to ag fertilizer data.
- **Keeps Fertilizer Experts Focused** on long-term, scientifically defensible model improvements for Phase 7 of model.

# Proposal the fine print

- Retain original planning targets, but extend the date
- Move forward with CAST-2021 and CAST-2023
- Define unaccounted loads as loads identified after the planning targets were set in July 2018
- Create interim 2025 planning targets by adding the difference between the WIP on the current version of CAST and CAST-2017.
  - The interim planning targets would change when CAST versions change.
- Conowingo is still evaluated separately
- Continue to enhance Partnership QA procedures



# Next Steps

- Management Board 12/15
- PSC 12/19 – Not on the agenda
- Following PSC meeting

...the numbers

Nitrogen Load (Million pounds)							
Jurisdiction	CAST-21 2021 Progress	CAST-17-based Planning Target	CAST-17 WIP Load	CAST-21 WIP Load	WIP difference	CAST-2021 2025 interim Target	Climate Reductions
DC	1.65	2.42	2.31	2.31	0.00	2.43	0.01
DE	7.11	4.55	4.46	5.38	0.92	5.47	0.04
MD	51.89	45.83	44.02	45.89	1.87	47.70	1.14
NY	13.36	11.80	11.67	12.38	0.70	12.50	0.40
PA	107.39	73.49	82.12	85.94	3.82	77.31	1.81
VA	57.21	52.95	49.57	50.65	1.08	54.03	1.59
WV	7.75	8.23	7.50	7.68	0.18	8.41	0.00
All	246.37	199.28	201.65	210.22	8.57	207.85	4.99
Phosphorus Load (Million pounds)							
Jurisdiction	CAST-21 2021 Progress	CAST-17-based Planning Target	CAST-17 WIP Load	CAST-21 WIP Load	WIP difference	CAST-2021 2025 interim Target	Climate Reductions
DC	0.07	0.130	0.105	0.102	-0.003	0.127	0.001
DE	0.14	0.108	0.081	0.096	0.016	0.124	0.003
MD	3.34	3.680	3.212	2.889	-0.323	3.356	0.111
NY	0.54	0.476	0.474	0.488	0.015	0.490	0.044
PA	3.68	2.905	2.865	2.912	0.047	2.951	0.095
VA	5.72	5.583	5.230	5.017	-0.213	5.369	0.337
WV	0.50	0.433	0.380	0.476	0.096	0.528	0.009
All	14.00	13.31	12.35	11.98	-0.37	12.95	0.60