Landscape Education for Water Conservation

Golden, CO

12/2/2025

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Introduction and Acknowledgements

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Welcome Remarks

Project Team

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Thank you to our sponsors!

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

We Want to Hear From You!

- Discussion opportunities
- Poll questions
- Board activities

Connect to Wifi

- **Network:** CC-Private
- **Password:** Gold1470$$$

Acknowledgements

- 120 Workshop Participants
- 130 SME Group Participants
- 12 Gap Analysis Participants

Thank you!!



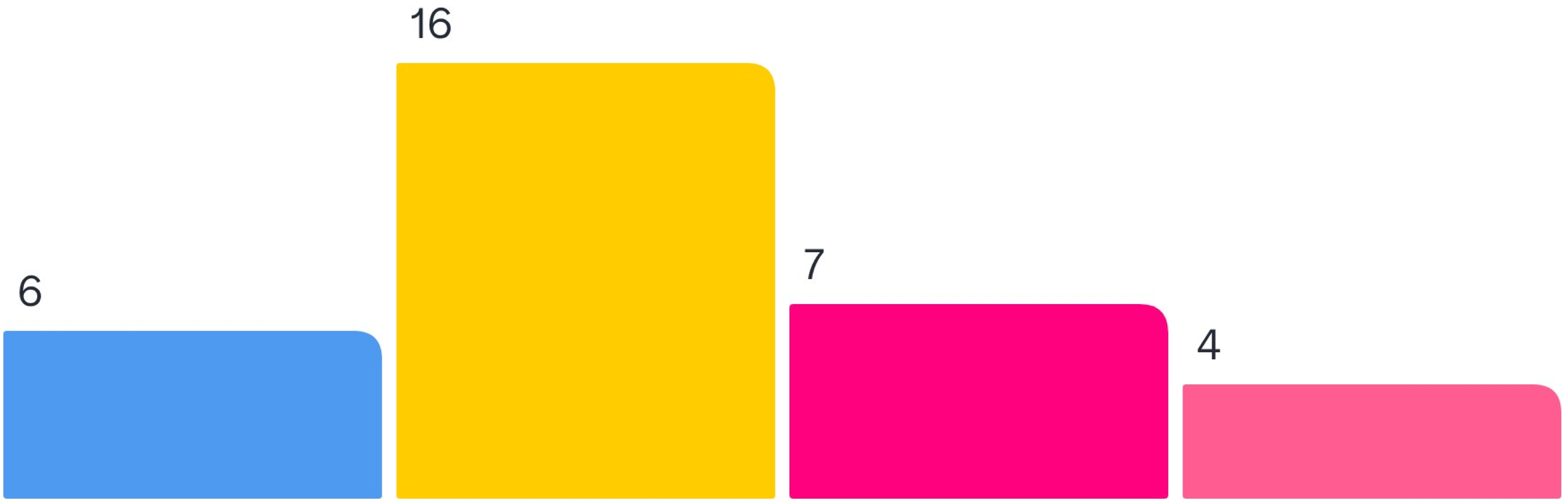
Agenda

Time	Topic
8:30 – 9 AM	Sign-in
9 – 9:15 AM	Introduction and Acknowledgements
9:15 – 10:15 AM	Project Overview and Results • Project Grounding and Goals Updates • Skills and Knowledge Outcome and Results • Gap Analysis Outcome and Results
10:15 – 10:30 AM	Break
10:30 – 10:45 AM	WRA Presentation and Update
10:45 – 11:45 AM	Project Reflections and Feedback Session
11:45 – 12 PM	Close Out and Next Steps



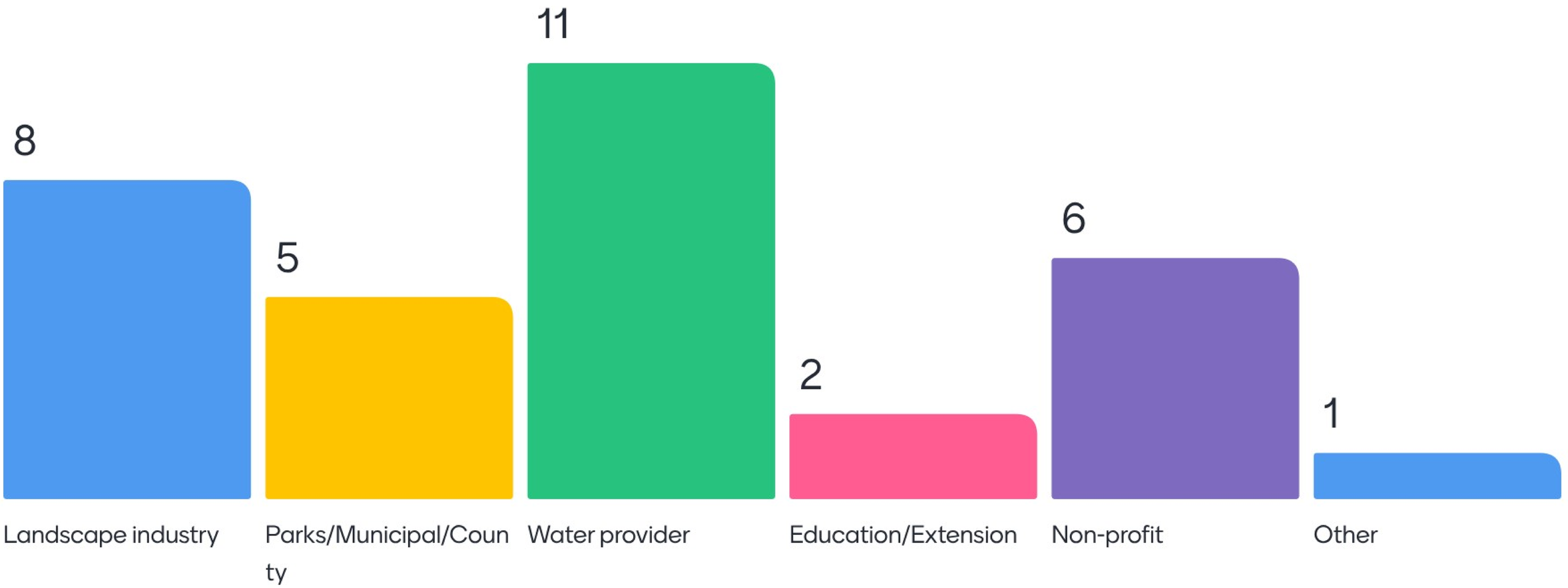
17

When do you start decorating for the holidays?



3
33

What industry do you represent?



4
33

Project Overview and Results

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Project History

Two years ago…

- ALCC Fall Forum

One year ago…

- Workshop

Six months ago…

- 4 SME Teams

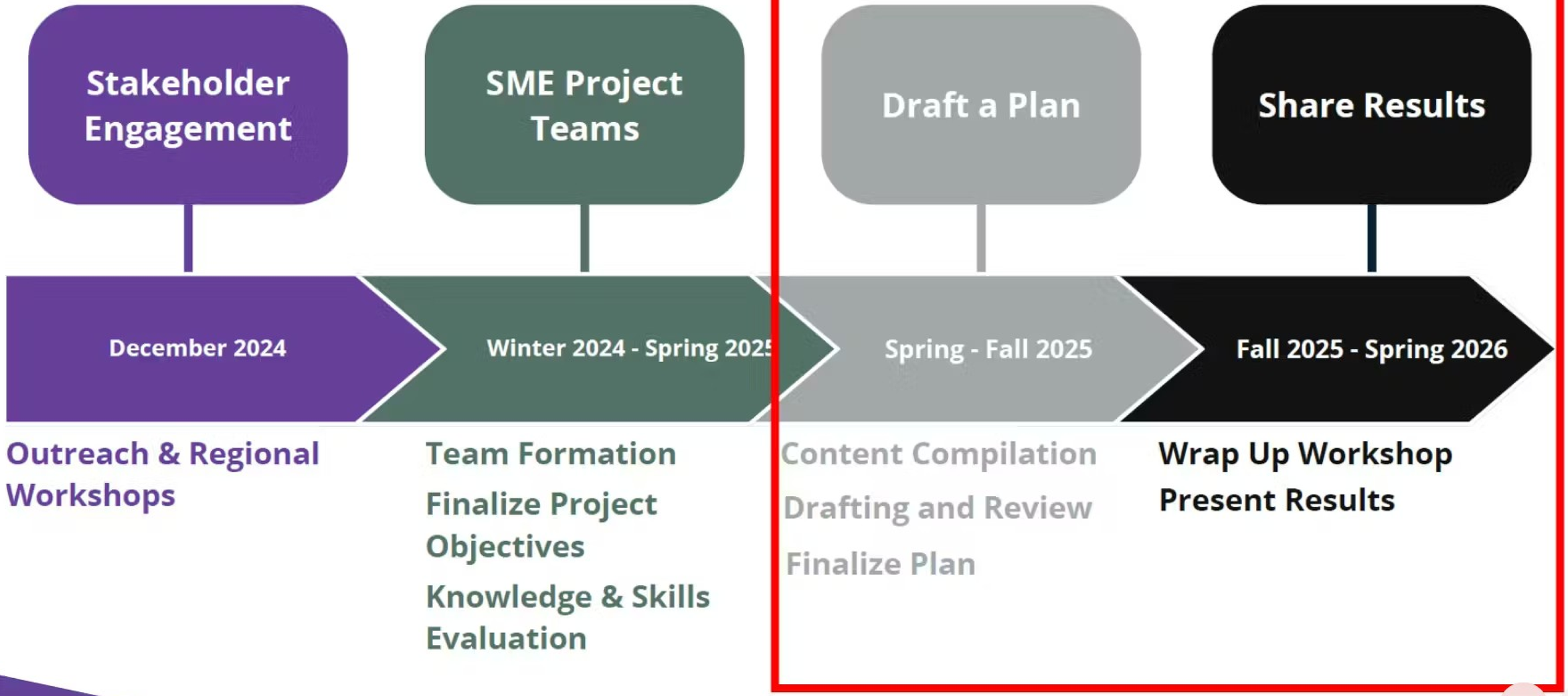
Three months ago…

- Gap analysis for 5 existing certifications

TODAY…



Project Overview



What this project is and isn't.

What it is:

- ✓ A way to gather information.
- ✓ A way to be collaborative.
- ✓ Focused on water conservation.

What it is not:

- ⊗ A certification.
- ⊗ Comprehensive on all landscape or water conservation practices.

Based on what you learned today, what do you think is most important for this project to achieve?

“List of key skills and recommendations on what existing programs are out there that cover the skills.”

“Synergy.”

“Clear direction … measurable.”

“Set a standard for the industry to work towards.”

“Culture change and appropriate expectation settings.”

“Buy in. Additional communication & contribution across industry.”

“Taking co-benefits into account.”

“Consensus.”

“Sustained results. Don’t let this fade.”

“Bridge gaps between design, installation, maintenance, etc.”

Objective and Goals

- **Project Objective:**
  - Identify Training Needs
- **Goals:**
  - Water efficiency
  - Stewardship & Co-benefits
  - Support evolving industry
  - Education (new!)



Project Objective

Identify Training Needs

Identify a list of skills and knowledge needed to improve water conservation statewide to support resilient and attractive landscapes.



Goal 1: Water Efficiency

Ensure effective and resilient water management practices are integrated at all professional levels of the Green Industry—including design, construction, irrigation, and maintenance—for both new and existing landscapes to create meaningful and measurable water savings

Goal 2: Stewardship & Co-benefits

Support natural resources by enhancing water and air quality, wildlife habitat, and additional co-benefits, including but not limited to the interconnection of soil, plants, and water to maintain landscapes and promote human health.

Goal 3: Support Evolving Industry

Support Colorado's Green Industry by fostering collaboration, building a skilled and fairly compensated workforce, promoting equitable access to certifications, and encouraging the next generation to pursue careers in landscaping.

Goal 4: Education Goal (New)

Promote equitable access to resilient and healthy landscapes through public and industry education, outreach, and engagement.

Skills and Knowledge Outcomes and Results

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Components of Landscape Water Efficiency

Construction

Design

Maintenance

Irrigation

Process

1. Workshops

- East and West Slope workshops to brainstorm skills and knowledge
- Resulted in 445 skills and knowledge from over 1,700 engagement points

2. SME Topic Teams

- SME Topic groups to narrow workshop results down
- Survey to finalize results
- Resulted in a final list of 72 skills and knowledge

3. Gap Analyses

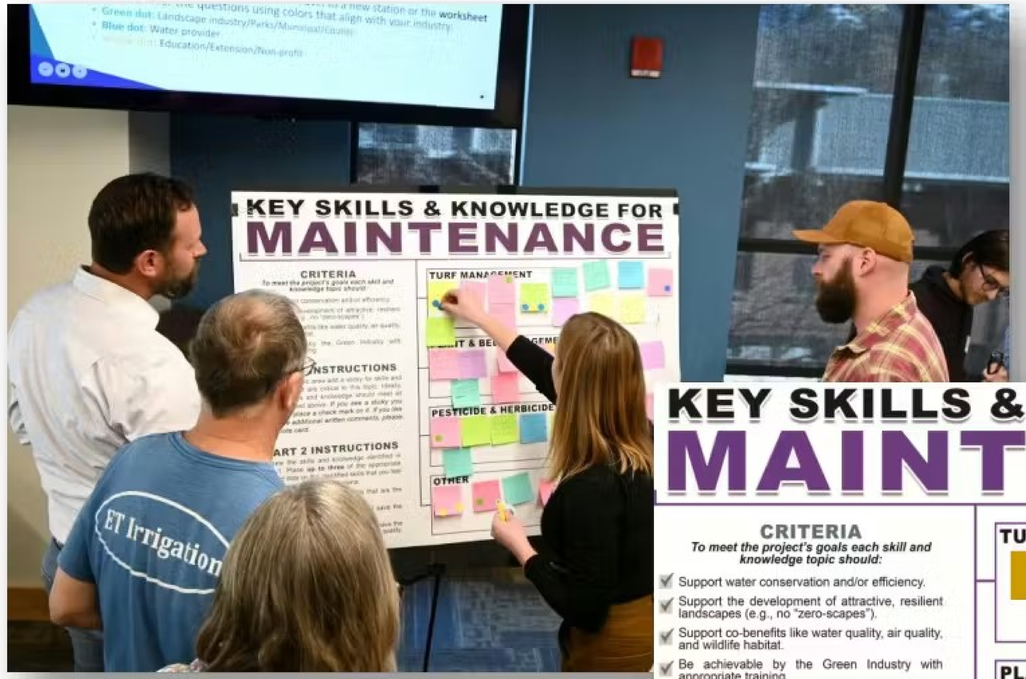
- Gap analysis to understand how skill and knowledge are covered in existing certifications
- Gap analysis of brainstormed list and skill and knowledge with 5 different certifications

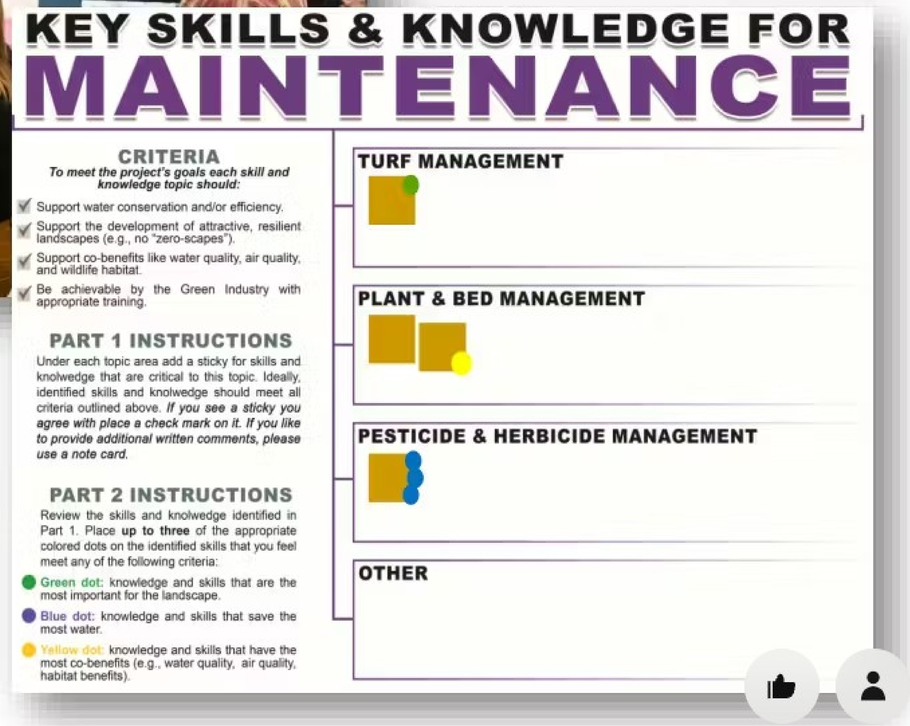
4. Findings and Phase 2

- Comprehensive list of key workforce skills for water conservation landscape practices
- Scope of Work Draft

Workshops: Outcomes By The Numbers

- Attendees: 120
- Total Interactions (Dots + Stickies): 1,753
- Construction S&K: 103
- Design S&K: 116
- Maintenance S&K: 115
- Irrigation S&K: 111





S&K = Skills and Knowledge

SME Topic Teams: **Summary**



Excel Work Book

Start: 455 S&K



Word Document



SME Group Reviews



SME Survey to Score Co-Benefits



Final and Scored

Final: 72 S&K

Skills & Knowledge (S&K) Process

4 SME TEAMS

- Construction
- Design
- Irrigation
- Maintenance



Construction SME Team

- **19 skills and knowledge**
- In general, most expressed a **need for accountability through verifying plan alignment with water conservation and sustainable landscape solutions and best practices.**



Top Themes:

- ✓ Plant & Material Installation
- ✓ Highwater Turfgrass Installation & Soil Preparation
- ✓ Native Grass Preparation & Installation
- ✓ Soil Health Awareness
- ✓ Pollution, Erosion & Sediment Control
- ✓ Sustainable Sourcing

Design SME Team

- **18 skills and knowledge**
- In general, most expressed a **need for deep knowledge in local ecology and native plants, understanding of theoretical plant water need, sustainable landscape solutions, regulations and incentives, and long-term maintenance strategies.**



Top Themes:

- ✓ Plant Selection & Water Budgeting
- ✓ Soil & Site Assessment
- ✓ Turfgrass Reduction & Replacement
- ✓ Stormwater Integration
- ✓ Mulch Utilization
- ✓ Sustainable Sourcing

Maintenance SME Team

- 15 skills and knowledge
- Had the highest combined average score!
- Most had direct connections to plant health and long-term water savings.



Top Themes:

- ✓ Soil Health & Improvement
- ✓ Turf & Plant Health Monitoring
- ✓ Native grass Care
- ✓ Collaborative Water Management & Scheduling
- ✓ Turfgrass Optimization
- ✓ Integrated Pest & Pollinator Management

Irrigation SME Team

- 20 skills and knowledge
- Had the highest water savings potential!
- Most focused on designing, installing, or maintaining a system for high water efficiency.



Top Themes:

- ✓ Weather & Site-Based Scheduling
- ✓ Irrigation Design & System Efficiency
- ✓ Water Budgeting & Management
- ✓ Monitoring & Analysis
- ✓ Customer & Contractor Collaboration

SME Topic Teams: Overall Scores

Category	Total Number of Skills and Knowledge	Average Water Savings Score[1]	Average Landscape and Plant Health Score[1]	Average Co-Benefits Score[1]	Average Overall Score[2]
Construction	19	3.9	4.3	3.8	11.9
Design	18	3.9	4.0	3.7	11.7
Maintenance	15	4.2	4.8	3.9	13.0
Irrigation	20	4.6	4.5	3.5	12.5

[1]*Respondents were asked to rank the benefits of each skill & knowledge on a scale of one to five, with five being the highest.*

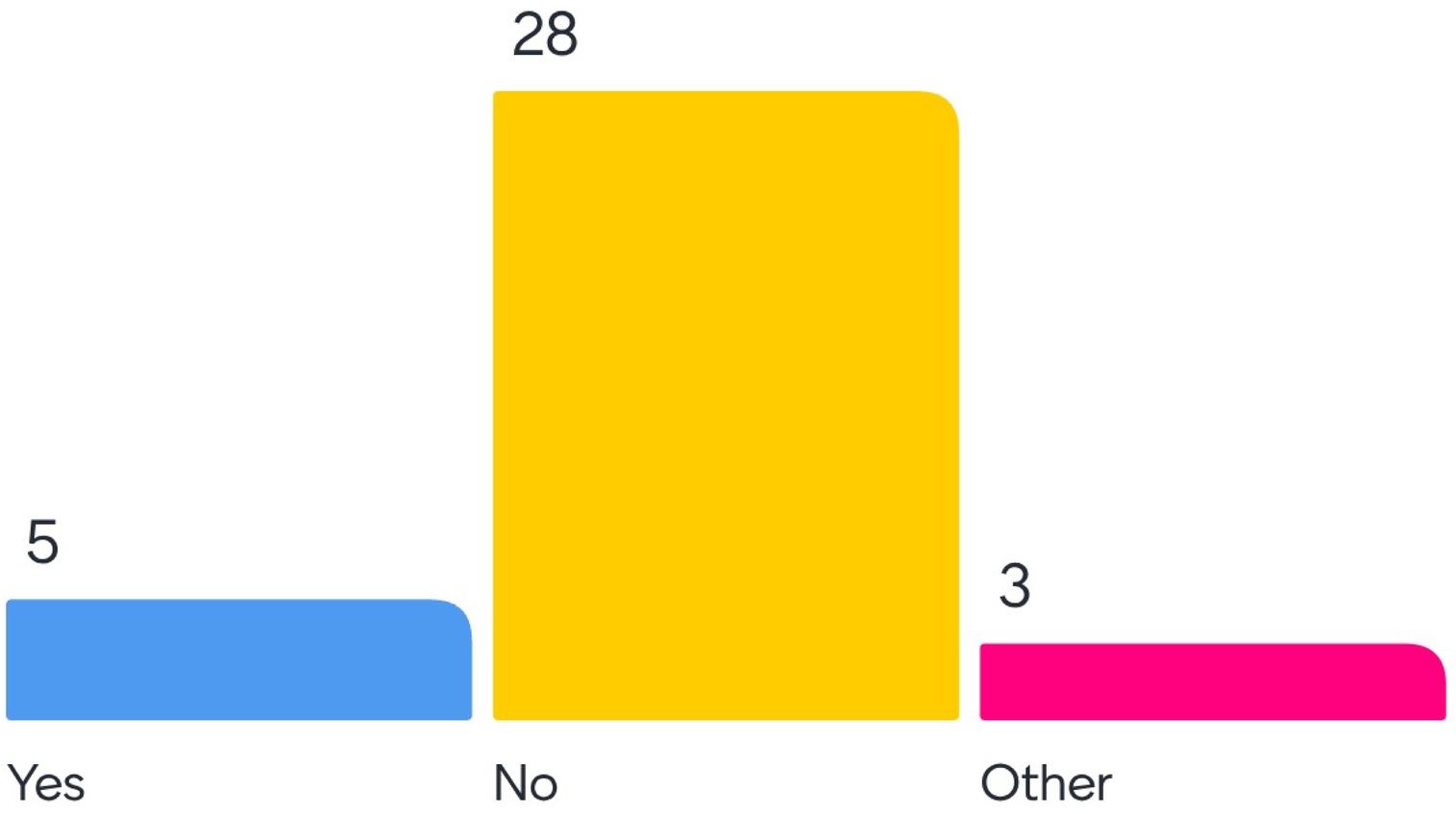
[2]*Sum of the averages of the water savings, landscape and plant health, and co-benefits score. Maximum possible score, signaling the highest overall benefit, is 15.*

Do any of these results surprise you?

Category	Total Number of Skills and Knowledge	Average Water Savings Score[1]	Average Landscape and Plant Health Score[1]	Average Co-Benefits Score[1]	Average Overall Score[2]
Construction	19	3.9	4.3	3.8	11.9
Design	18	3.9	4.0	3.7	11.7
Maintenance	15	4.2	4.8	3.9	13.0
Irrigation	20	4.6	4.5	3.5	12.5

[1] *Respondents were asked to rank the benefits of each skill & knowledge on a scale of one to five, with five being the highest.*

[2] *Sum of the averages of the water savings, landscape and plant health, and co-benefits score. Maximum possible score, signaling the highest overall benefit, is 15.*



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SME Topic Teams: Top Scoring S&K Themes

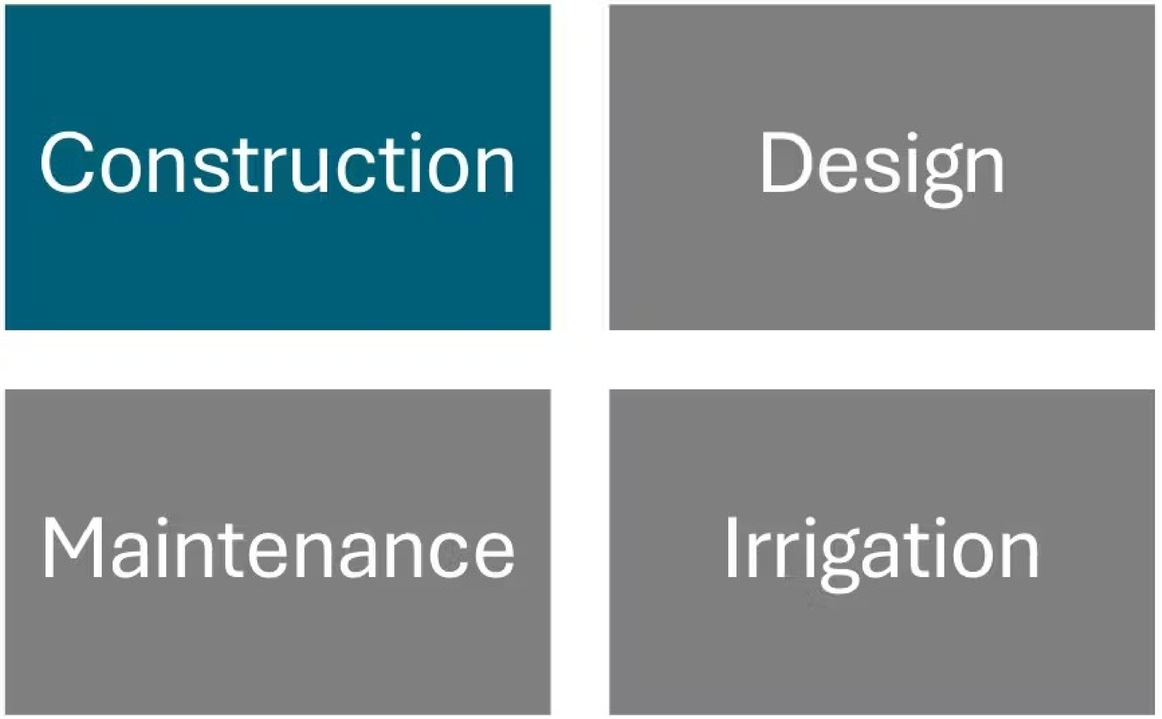
Themes:

✓Native grass

✓Soil health

✓Irrigation schedules

Top scores came from construction category.



Construction: Create and implement a native grass establishment plan

Construction: Choosing a native grass installation practice according to seed type and site conditions

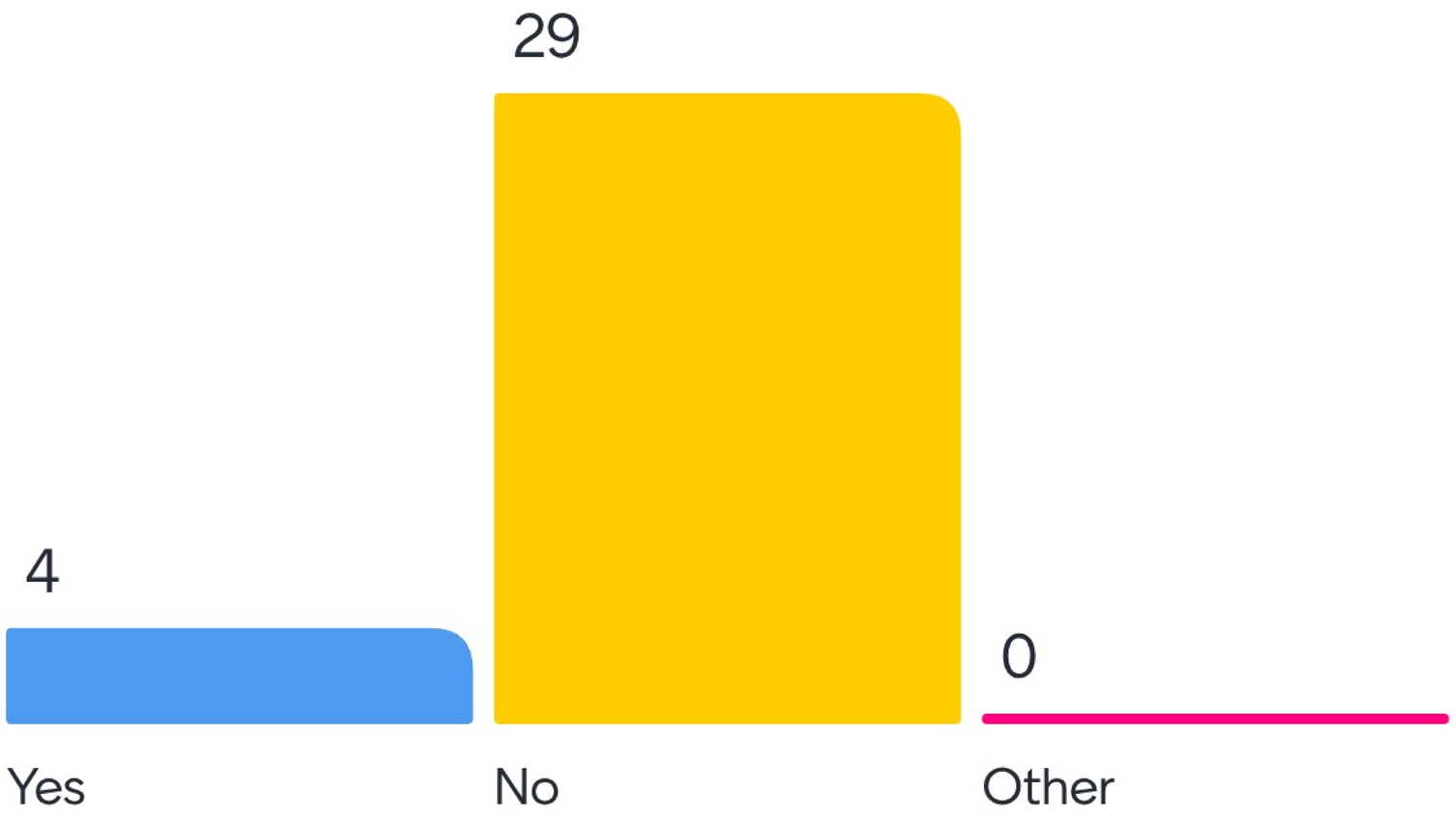
Irrigation: Dialing in watering schedule via weather and site conditions

Construction: Understanding the aspects of healthy soils and their importance to the built landscape (tie for 4th place)

Construction: Verifying the native seed selection corresponds to project parameters and communicate germination expectations (tie for 4th place)

Maintenance: Monitoring native grass plant health, environmental conditions, and soil moisture and aesthetic goals to determine watering schedule, including watering deep and infrequently (tie for 4th place)

Do the top scoring skills and knowledge surprise you?



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SME Topic Teams: Regulation Results

- Only **6** of **72** flagged with at **least 50% of respondents** saying the skill/knowledge should be regulated:

Construction

- Understanding healthy soils
- Proper contour and grading.

Design

- Understanding plant factors to calculate the landscape water requirement per hydrozone
- Avoiding using landscape fabric

Irrigation

- Integrating irrigation design best practices
- Testing the system after installation to ensure performance and limit water waste

Maintenance

- N/A – category did not have any skill or knowledge that surpassed the 50% threshold of votes for regulation.

Construction

- Understanding healthy soils
- Proper contour and grading

Design

- Understanding plant factors to calculate the landscape water requirement per hydrozone
- Avoiding using landscape fabric

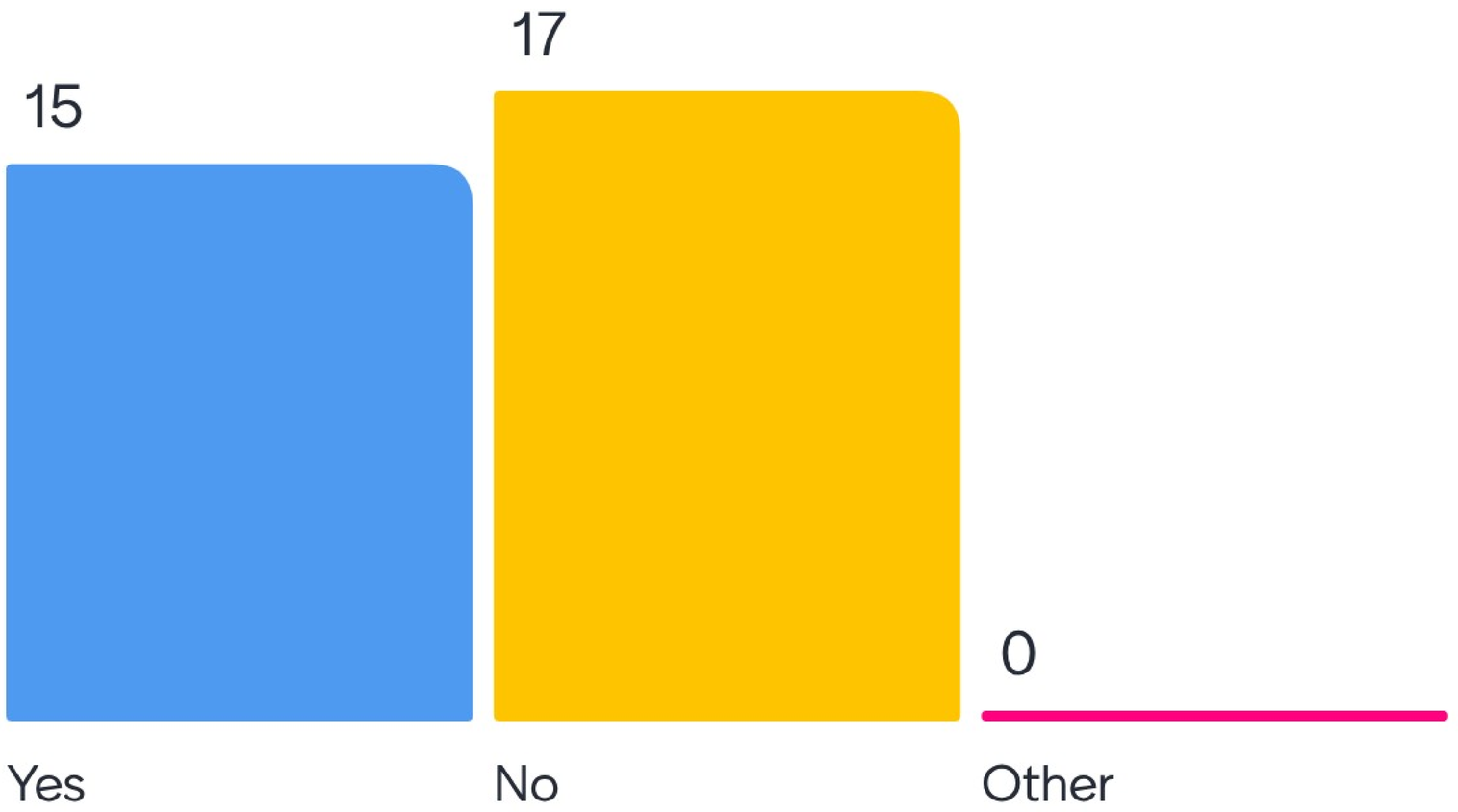
Irrigation

- Integrating irrigation design best practices
- Testing the system after installation to ensure performance and limit water waste

Maintenance

- N/A – category did not have any skill or knowledge that surpassed 50% threshold of votes for regulation

Do the results regarding which skills and knowledge that should be regulated surprise you?



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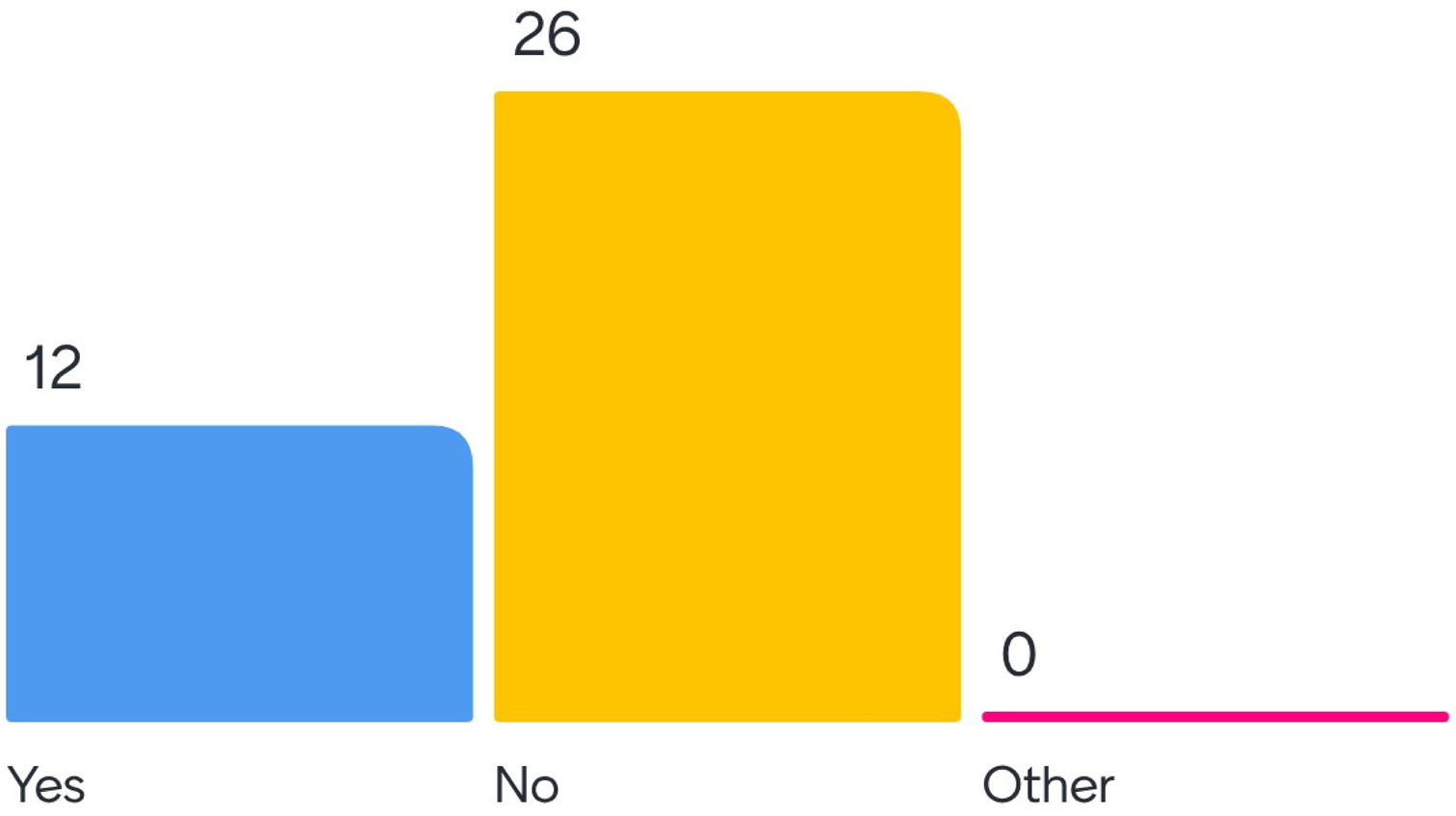
SME Topic Teams: Who Should Know Results

S&K with **at least 50%** of respondents identifying that the skills was "**extremely important**" for each group to know:

Group	Construction	Design	Maintenance	Irrigation	Total
Entry level employee	7	0	0	6	**13**
Supervisor/ manager	18	12	15	20	**65**
Landscape designer	6	16	4	10	**36**
Advanced Irrigation Technician	*Not Surveyed*	*Not Surveyed*	*Not Surveyed*	19	**19**
Public	1	7	2	3	**13**
Total	**32**	**35**	**21**	**58**	-

Do the results regarding who should know what skills and knowledge surprise you?

Group	Construction	Design	Maintenance	Irrigation	Total
Entry level employee	7	0	0	6	**13**
Supervisor/ manager	18	12	15	20	**65**
Landscape designer	6	16	4	10	**36**
Advanced Irrigation Technician	*Not Surveyed*	*Not Surveyed*	*Not Surveyed*	19	**19**
Public	1	7	2	3	**13**
Total	**32**	**35**	**21**	**58**	-



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Gap Analysis
Outcomes and Results

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Gap Analysis: Summary

Certifications Reviewed
✓CLIA
✓GreenCO BMPs
✓NALP LICT
✓QWEL
✓SLM

Special thank you to our reviewers!

CLIA: *Eric Olson and Spencer Bernard*

GreenCO BMP: *Rick Schultz and Lyle Fair*

NALP LICT: *Donavan Ryan and Josh Pool*

QWEL: *Jason Naughtin and Victoria Arling*

SLM: *Kerry Poppe, Khalan Gocken, and Melissa Edmin*

Gap Analysis: Results

Scores

N/A: Certification is not relevant.

1: The S&K is barely mentioned, or is not specific enough.

2: The certification ensures that trainees acquire at least 80 – 90& of the S&K.

3: The certification ensures trainees acquire S&K and/or goes beyond what is listed.

Category	CLIA	GreenCO BMP	NALP LICT	QWEL	SLM	Average
Construction 	1.0	2.0	1.2	1.6	1.4	1.4
Design 	1.7	2.2	1.0	1.8	1.7	1.7
Maintenance 	1.8	2.1	1.8	1.6	1.7	1.8
Irrigation 	1.9	2.2	1.5	2.0	1.7	1.9
Average	**1.6**	**2.1**	**1.4**	**1.7**	**1.6**	**1.8**
Total Count N/A	**46**	**0**	**0**	**0**	**7**	-

What are your takeaways from the gap analysis?

Good certification options; maybe need something that hits what GreenCO BMPs but is engaging

Existing certifications are good but don't cover what today's landscapers need to know.

Feels appropriate.

Difficult for landscapers to know where to best direct their training investments



Certifications are limited in what they can cover. How do we balance needed detail and ability to digest?

Different purposes. Not as holistic as this approach is intended to be.

Need multiple certifications to be well rounded across the Skills and Knowledge

Could Coloradoscaping Certification fill the gaps?

What are your takeaways from the gap analysis?

Although GreenCO scored high, there is no entity who helps administer the certification as compared to the others.

Curious if the CID or CIC IA certification would score higher across the board for other categories besides irrigation

Great foundation but we need to dig deeper to get the results we are looking for.

I'm surprised the CLIA scored so high considering there were so many skills not included



There needs to be a new broad certification to cover all of the categories.

Could GreenCO be revisited and how would that be done?

It might be good to have an option to address all, with an optional special focus on one.

These skills should be offered as supplemental modules/CEU's to existing certifications

Break



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WRA Presentation

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COLORADO WATER CENTER
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Researching Pathways to Expand Landscape and Irrigation Professional Education in Colorado



Project Background

- Currently no requirement to be certified or licensed for installation or maintenance
- Landscapers and irrigators have outsized impact on our water resources
- Water availability crisis in the Western United States
- Transition to waterwise landscaping
- State Legislation and Local Codes
- Certifications currently offered to Colorado industry – QWEL, IA, ALCC SLM, others.
- Potential to elevate the industry

Prior Research to Expand Certification in Colorado

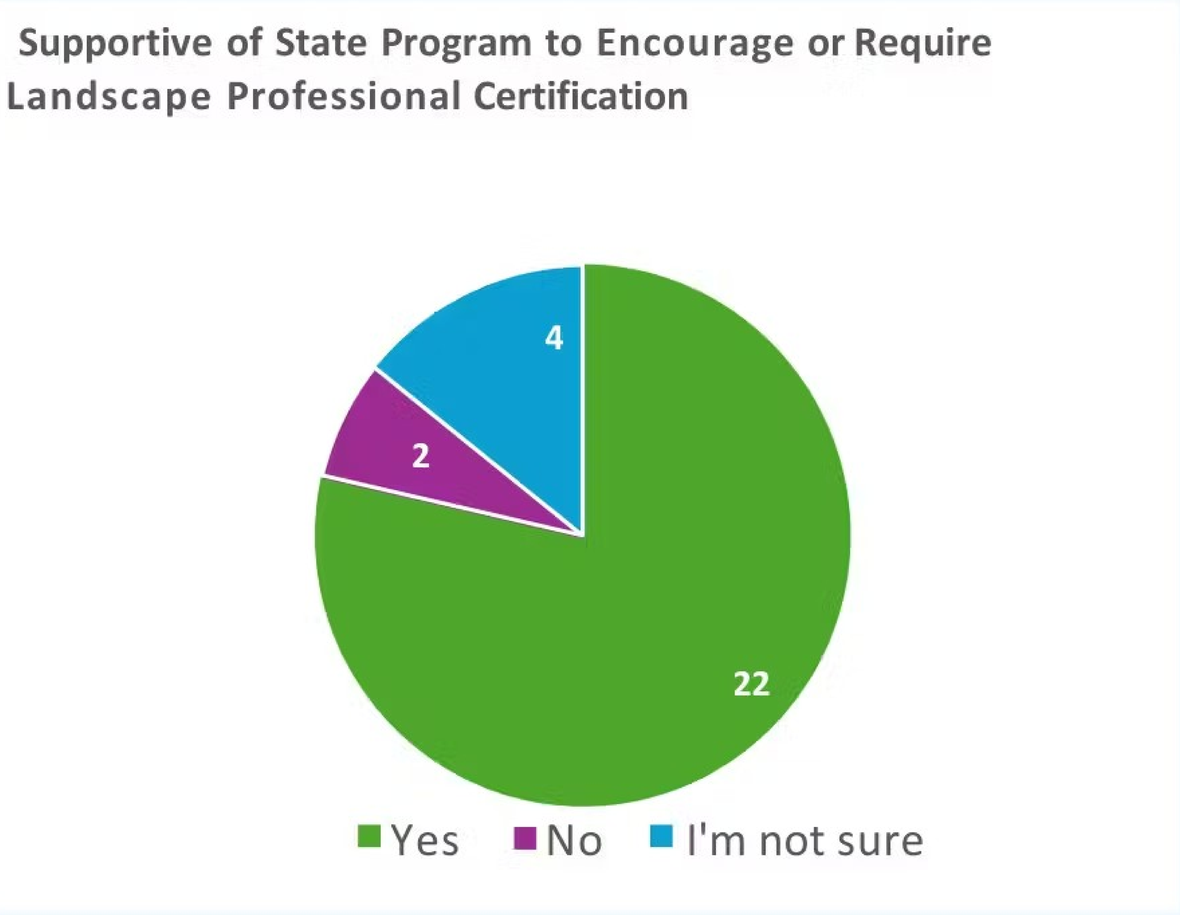
- Steering Committee
- Policy Research
- Policy Paper



Survey Results

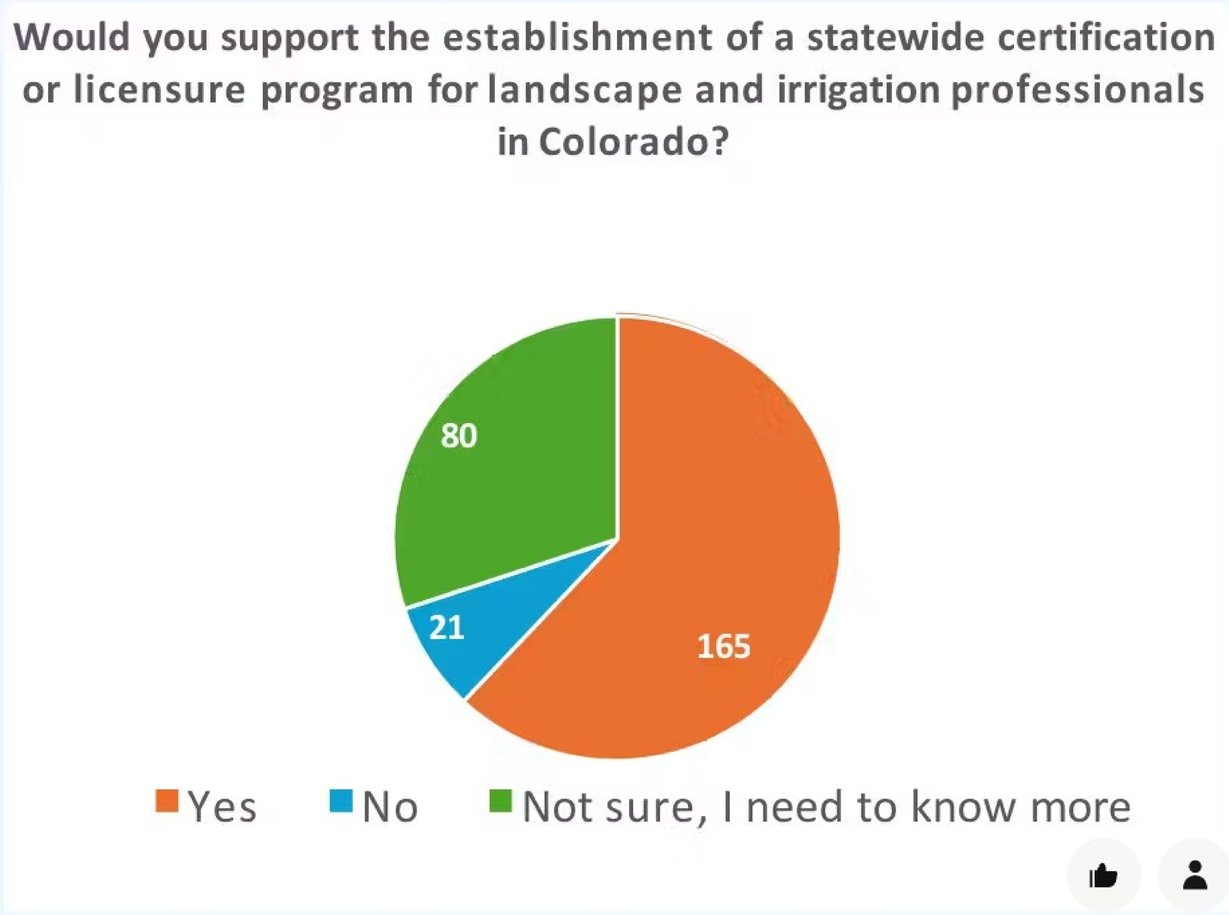
Water Providers, 2021

28 Responses – 79% supportive



Landscape and Irrigation Professionals, 2023

266 Responses – 62% Supportive





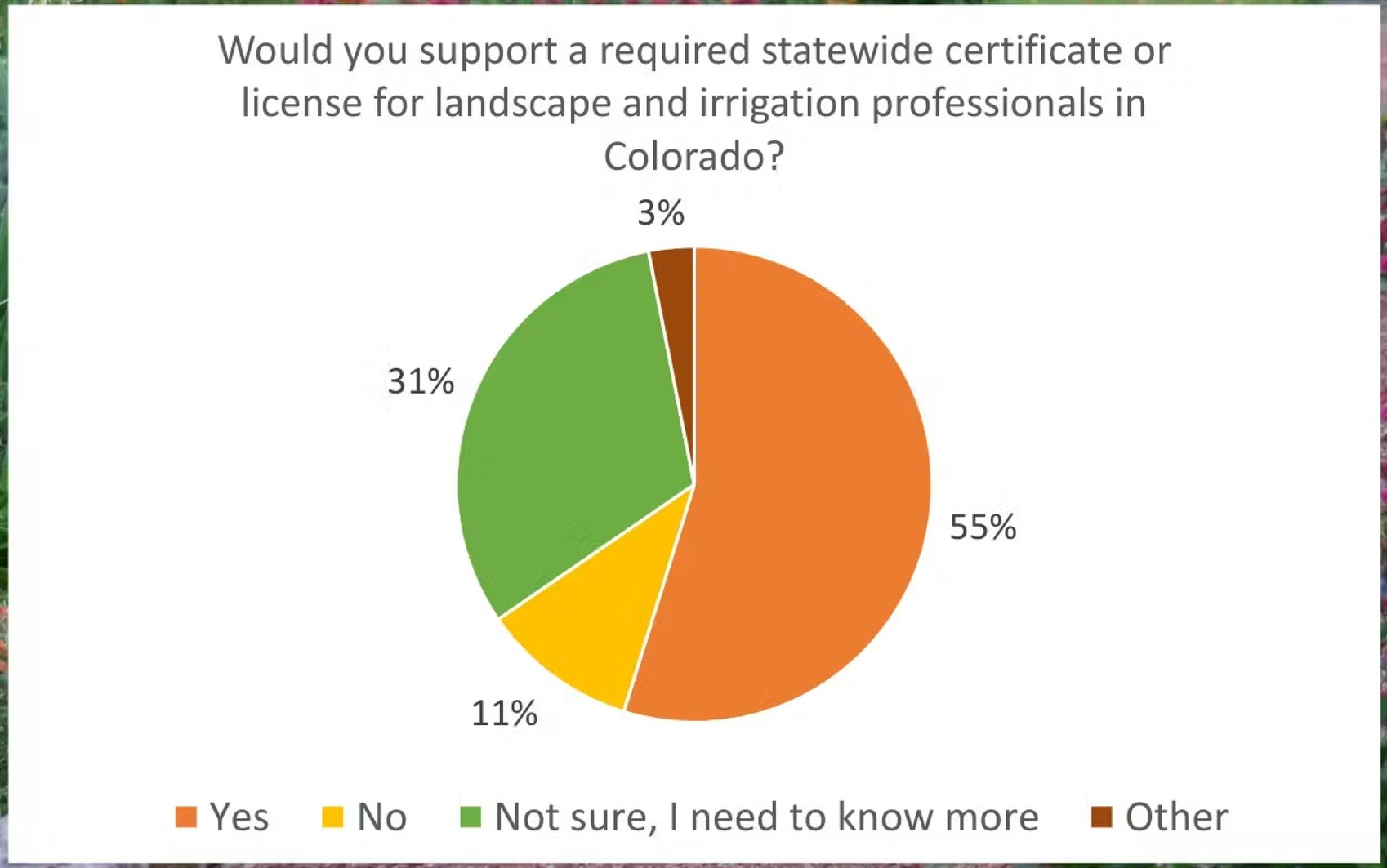
Project Overview

- Currently researching the feasibility of a Colorado statewide program
- Research phase
- Engagement with industry professionals
- Report

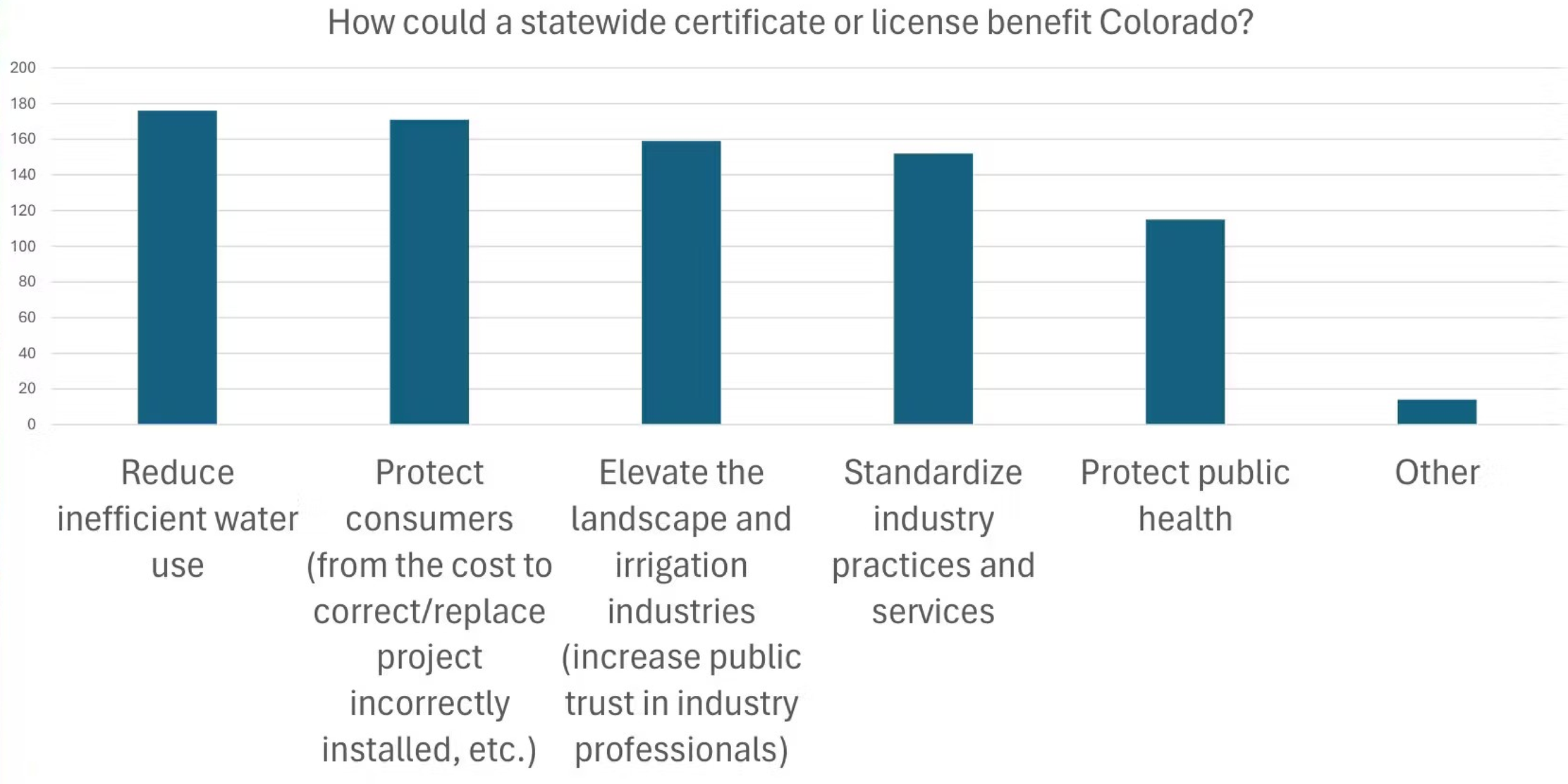
Research Key Takeaways

- State Agency Interviews:
  - DORA Sunrise Review Process
- State Research Takeaways:
  - Provide exam and training materials in Spanish
  - Account for prior industry experience
  - Consider different levels of licensure or certification
  - Enforcement is important to make a requirement meaningful

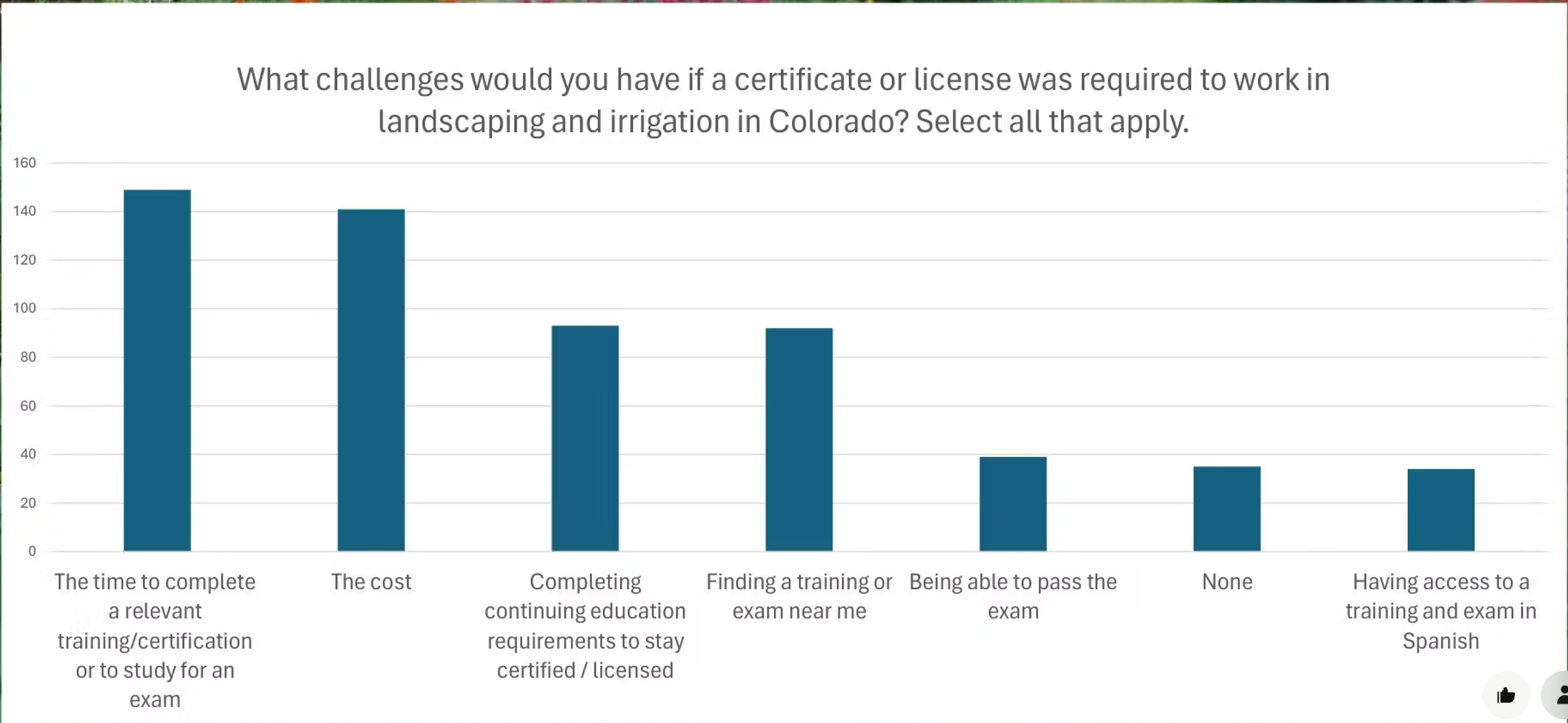
Stakeholder Engagement Survey Results, 2025



Stakeholder Engagement Survey Results, 2025



Stakeholder Engagement Survey Results, 2025



Interview Key Takeaways

- **Certification vs. Licensing**
  - Support for both, with licensing viewed more cautiously
- **Training & Skill Gaps**
  - High turnover and training inconsistencies
  - Hands-on and Spanish training needed
- **Impacts of Certification/Licensing**
  - Could elevate the industry
  - Risks: higher costs passed on to businesses/consumers; could disadvantage smaller companies.
  - Desire for **state support** (stipends, tax incentives, insurance discounts) if certification/licensing is required.





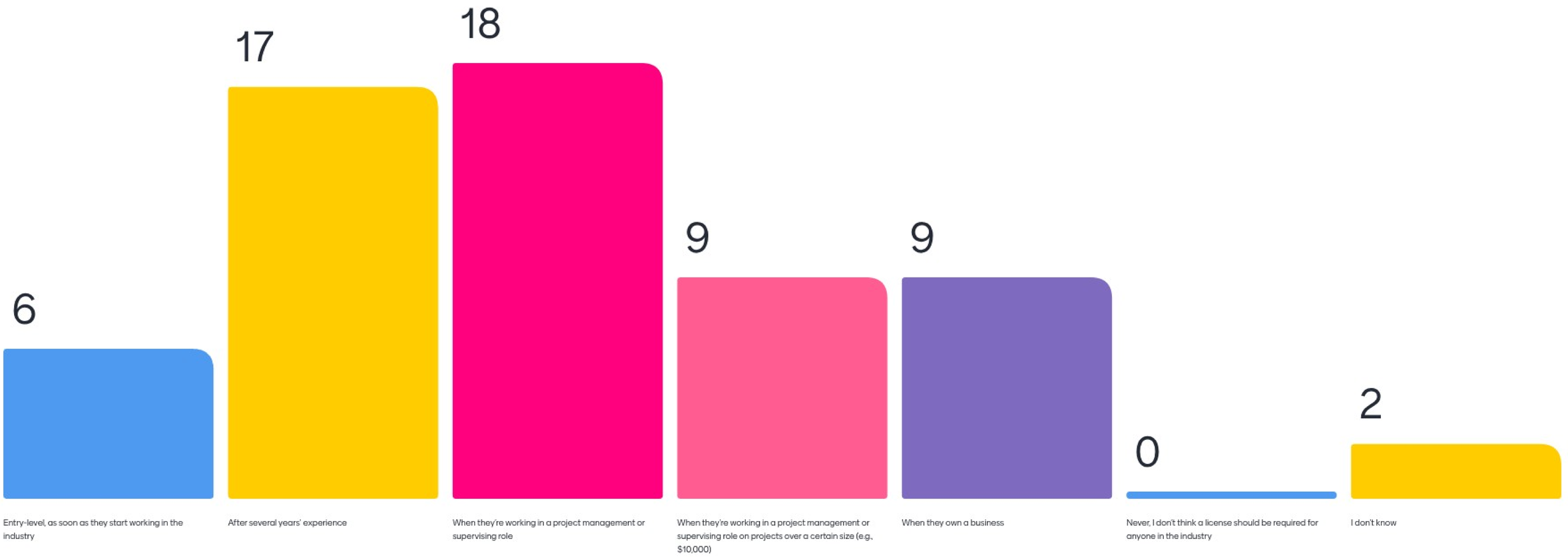
Interview Key Takeaways (Continued)

- **Common Mistakes & Corrective Work**
  - Certification/licensing could help reduce mistakes and the need to correct work
- **Industry Needs from Certification**
  - Practical skills: reading plans/drawings, understanding local codes, correct irrigation system installation and tree installation.
  - Leadership skills for foremen/supervisors.
  - Accessible CEUs

What's Next?

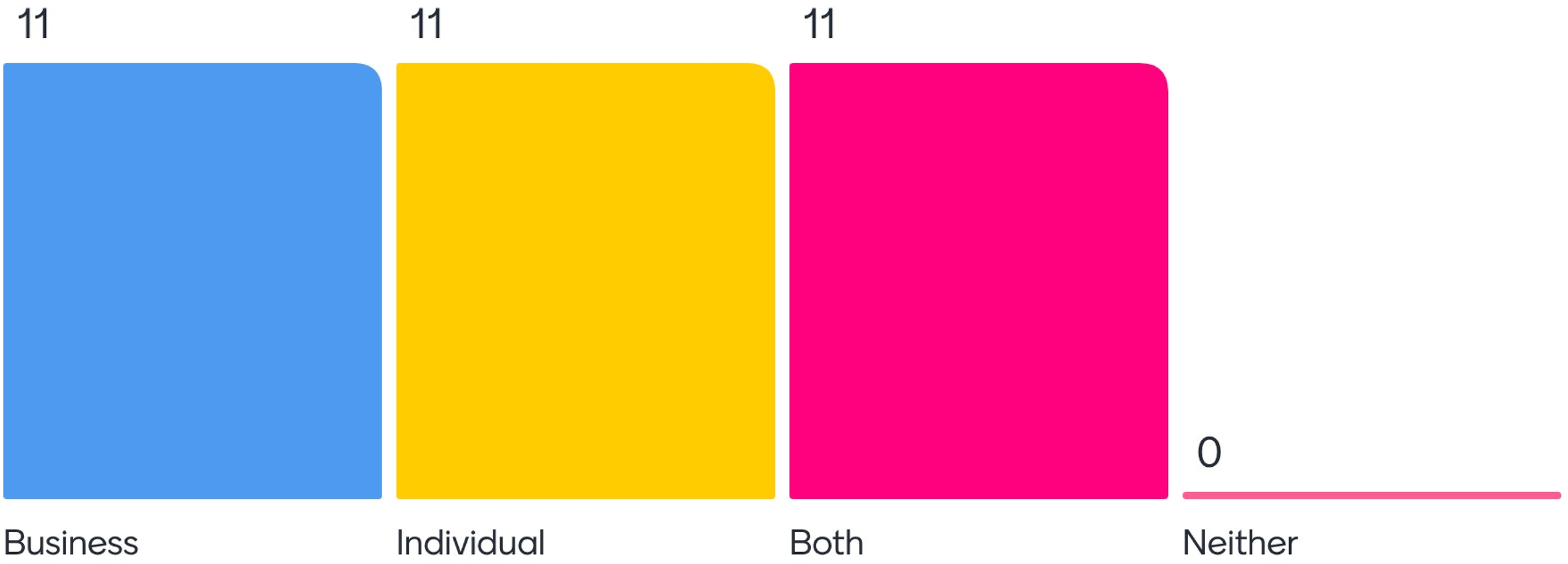
- Final Project Report
- Report out at ProGreen in February 2026
- Industry needs to take next the steps
  - What will this look like?
    - Many details need to be figured out
  - DORA application?
  - Legislation?

At what stage in their career might a landscaper or irrigator need to obtain a license? Select all that apply.



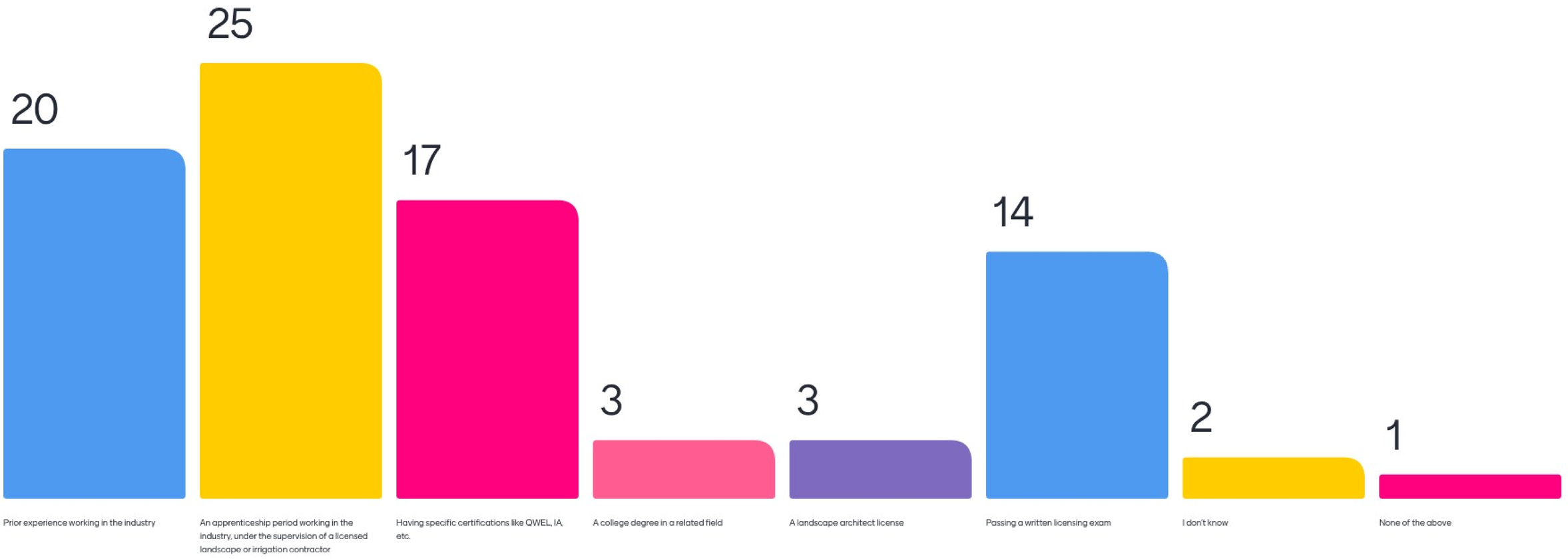
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Who in the landscape or irrigation industry should be required to get a license?



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If a licensing program were established, which prerequisites or qualifications should be required for landscapers or irrigators? Select all that apply



If a license were established, what elements would be most critical to ensuring program success? Rank from most (1) to least important (4).



What else would you like to make sure is considered if a license is established?

How is it enforced?

Enforcement

How enforced?

Policing of the license

Ensuring a path into the industry with minimal barriers overall

Support and enforcement from the industry

Would all individuals in a company need a license? Would employees be able to work under a licensed supervisor?

Be cautious: concerned licensing is a barrier to entry.

What else would you like to make sure is considered if a license is established?

Will the consumers value the license? If not why would I get it?

Landscape/irrigation company registry to ensure licensure is met

Unobtrusive to work process. Often too much regulation can have negative effects.

Making the list public knowledge of those licensed.

Hiring is hard enough. How can this not be a barrier.

I think it should be required on an individual level and not only supervisory roles. There could be different levels/ties for certification that could potentially impact qualifications and rate of pay

There would need to be a way to track results related ti cost and water use reduction.

Enforcement without making immigrant workers vulnerable to deportation

What else would you like to make sure is considered if a license is established?

Ensuring a benefit to obtaining the license beyond continuing business as normal

Extra support for smaller crews and early career professionals.

Who enforces the license/certification?

Percentage of a company to be certified with current certifications already offered. This would allow the company to be licensed automatically

How to reach the many small companies in the state - the two guys and a truck. What are the impacts and repercussions of not having a license?

Ensure transfer of skills

Funnel information down to the guy doing the work

Boots on the ground certifications

What else would you like to make sure is considered if a license is established?

Legislative requirement and website like water plant operators require to track certifications as an enforcement mechanism.

Increased pay for increase qualifications?

Ecosystem services, inclusion of native plants

Other Project Reflections

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Other Project Reflections

- **Consumer Education:** A statewide consumer educational initiative is critical to adopting resilient landscape solutions and to promote the value of certification.
- **Additional Topics:** While the identified list of skills and knowledge for landscape water conservation is comprehensive, it does not cover all topics that are important for the landscape industry.
- **Education Approach:** Hands-on training is critical for this type of industry. Any certification needs to balance classroom learning with hands-on implementation.
- **Beyond the Curriculum:** Water-wise curriculum is only part of changing industry.

Instructions

- Four activity boards for the four project reflections
  - ✓Consumer Education
  - ✓Additional Topics
  - ✓Education Approach
  - ✓Beyond the Curriculum
- Travel to the board(s) that are most interesting to you!
- Answer question on the board using a dot and/or sticky.
- Answer the questions using colors that align with your industry:
  - **Green dot**: Landscape industry/Parks/Municipal/County
  - **Blue dot**: Water provider
  - **Yellow dot**: Education/Extension/Non-profit

CONSUMER EDUCATION

A statewide consumer education initiative is critical to adopting resilient landscape solutions and to promote the value of certification.

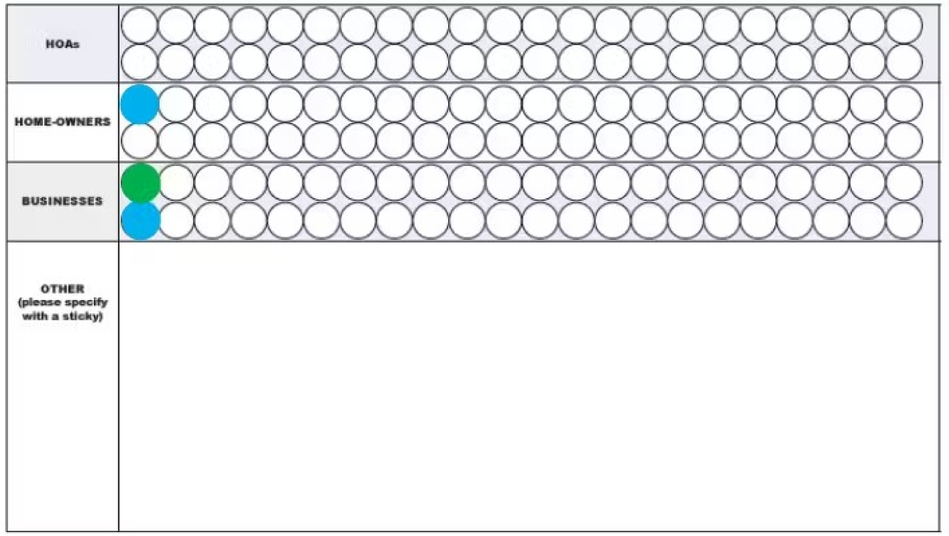
Answer the questions using colors that align with your industry:

- **Green dot**: Landscape industry/Parks/Municipal/County
- **Blue dot**: Water provider
- **Yellow dot**: Education/Extension/Non-profit

What does a successful state-wide public education campaign for adopting resilient landscape solutions look like?

What are the TOP THREE things you would want the public to understand?

Who would be the primary audience for a state-wide public education campaign? Please place a dot for all applicable audiences.



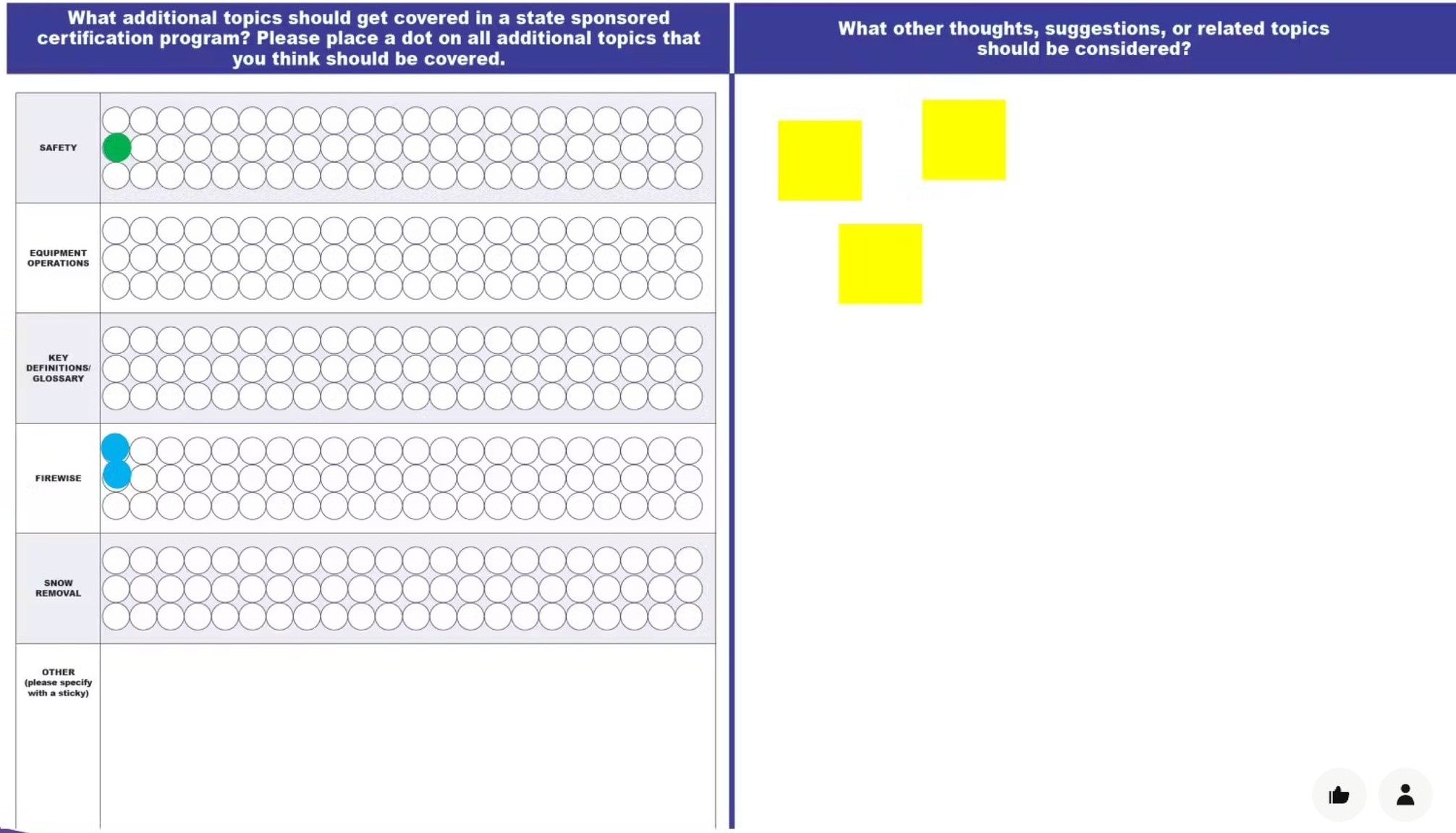
Other thoughts, suggestions, or ideas related to a state-wide public education campaign:

ADDITIONAL TOPICS

While the identified list of skills and knowledge for landscape water conservation is comprehensive, it does not cover all topics that are important for the landscape industry.

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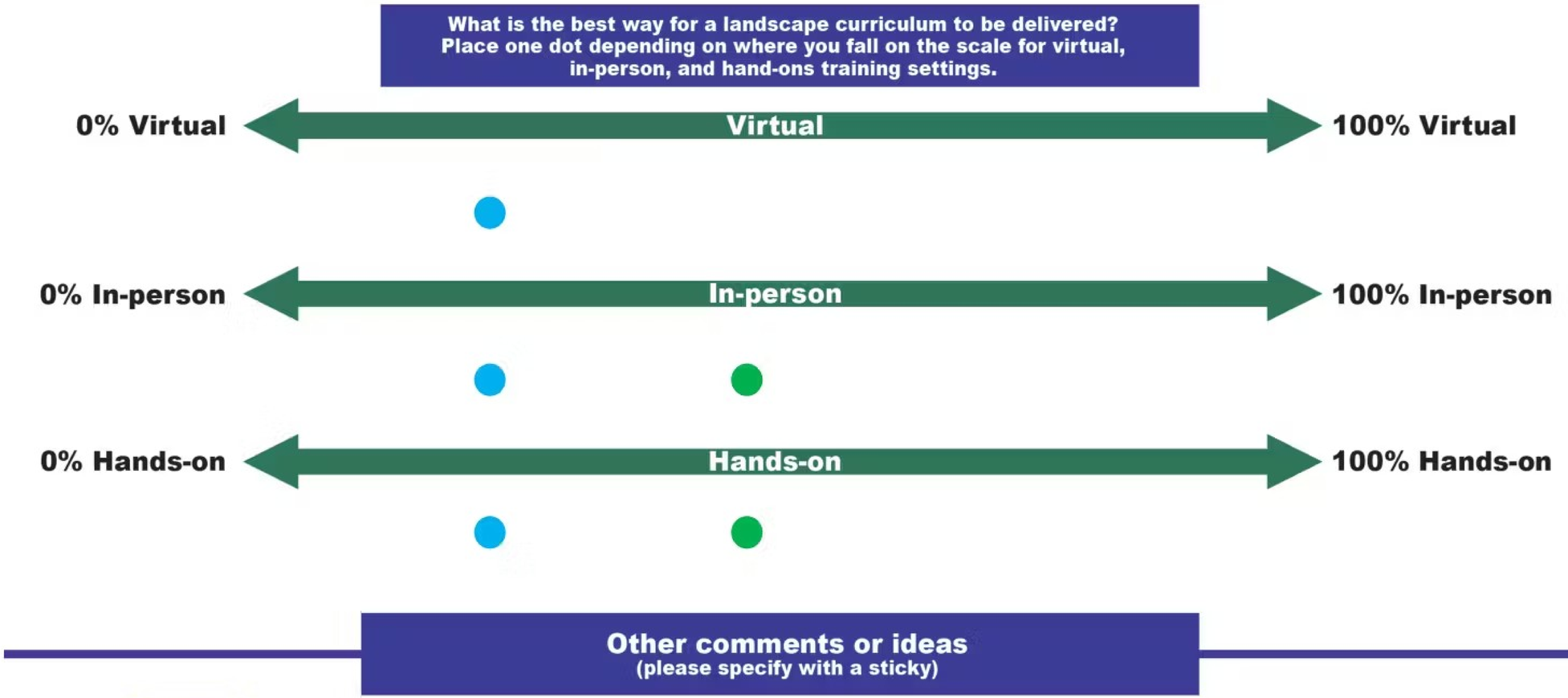


EDUCATION APPROACH

Hands-on training is critical for this type of industry. Any certification needs to balance classroom learning with hands-on implementation.

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BEYOND THE CURRICULUM

Water wise landscape curriculum is only part of the solution.

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What additional factors should be taken into consideration to make this effort successful?	What's needed to make education valuable to the consumer?
How do we ensure vibrant and resilient landscapes with an uncertain or limited water supply?	Are there alternatives to a statewide certification? What are they?

Wrap Up and Next Steps

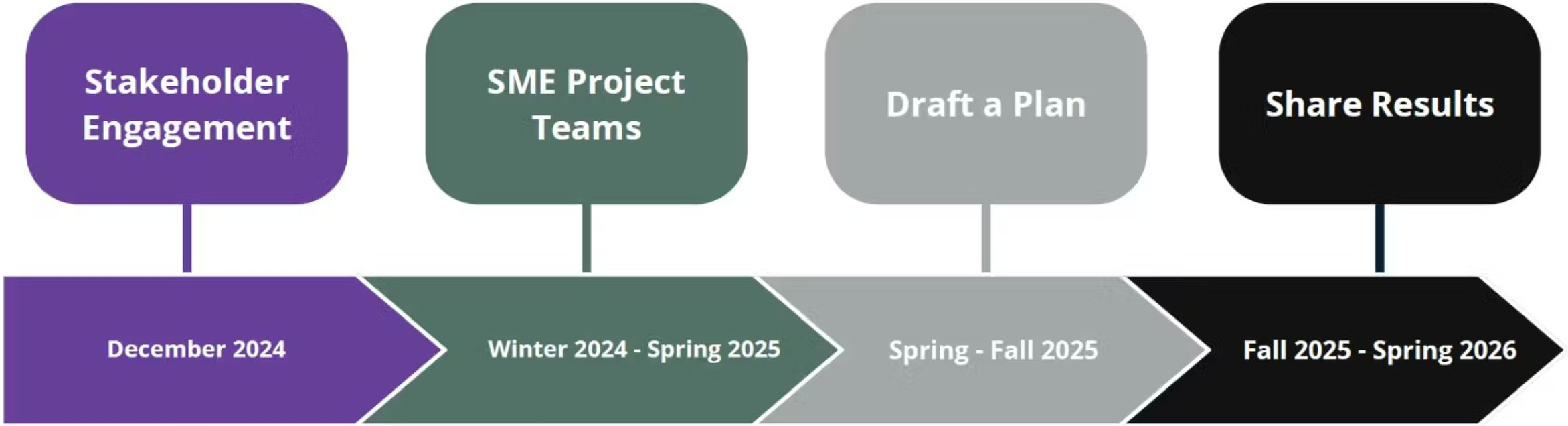
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Project Overview



Outreach & Regional Workshops

Team Formation

Finalize Project Objectives

Knowledge & Skills Evaluation

Content Compilation

Drafting and Review

Finalize Plan

Wrap Up Workshop

Present Results

Scope for Phase Two

- Focuses on grouping the S&K into topics and creating competency standards and measurable learning outcomes.
- Develops free learning modules based on topics.
- Offers complimentary education to existing certifications.
- Provides a framework for future needs.

Who's in?

- Looking for an organization to manage grant proposal
- Looking for financial partners
- Looking for contributors to review material

What is the number one thing you would like to see as a next step to this project?

72 modules

An example module

If something isn't required I don't think it will gain traction

72 tic toks

Continued collaboration between water, landscape, education , and NGOs.

Timeline release for the consumer

Improved outcomes in the industry!

Water management and budgeting module

What is the number one thing you would like to see as a next step to this project?

A good matrix of existing certifications and modules and how can be combined to meet highest rated S&Ks

To hear landscapers asking how they can get their people certified! Hear them starting to get excited now!

A comprehensive list of where the modules could be used and potentially required.

Suggested path for how to integrate modules into existing certifications and system

What other outlets do you envision the modules being offered at?

ProGreen presentation to get more stakeholders

More out reach to see what businesses think about certification and whether it is individual or business based.

A scoring system.

What is the number one thing you would like to see as a next step to this project?

Use the rubric and principles of backwards design to develop training curricula. Modules are good... all the modules taken together over time can lead to certification/licensing

Modules as additional content that can be used as ceus

WIIFM? Why would I bother with these if my customers aren't asking for it?

Small modules at first with planning to build out to bigger modules

Free beta classes to gain interest

Pre and post surveys to guage learning outcomes of training

This is more of a brain dump... modules could also be used to train the trainer. A module on plant identification and concentration of what ecoregion plants grow in. Aka know what soils and water regimes

Suggested path for reaching small businesses including suggested ways to communicate the WIIFM aspect

What is the number one thing you would like to see as a next step to this project?

A clear concise purpose statement (or guiding statement or thesis) that says exactly what you are trying to accomplish and how.

Thank you!

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