EARTHQUAKE READY BURNSIDE BRIDGE

Community Task Force Meeting #12

Department of Community Services
Transportation Division

February 10, 2020

Agenda

1. Welcome, Introductions & Housekeeping
2. Public Comment
3. Project Update
4. Preferred Alternative Process and Timeline
5. Evaluation Criteria Topics Weightings
6. Closing Remarks

Public Comment

Project Update

Recent Activities

- Briefings
- Workshops

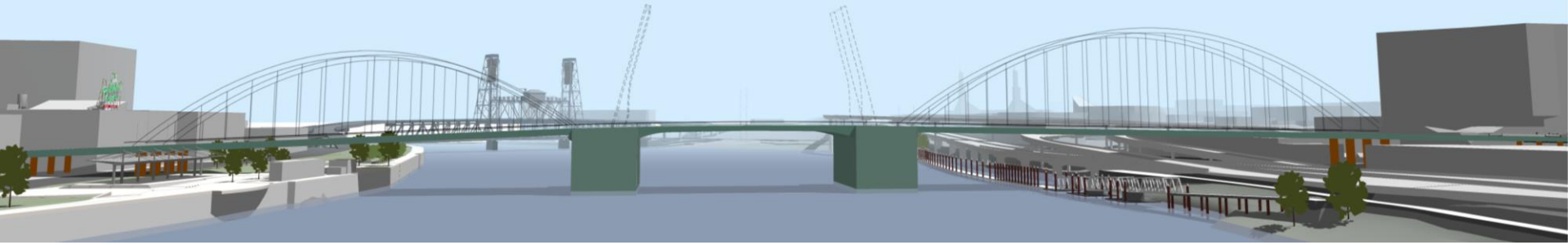
Project Update

EARTHQUAKE READY BURNSIDE BRIDGE

In-kind Replacement: Long-span / Conventional Bridge Comparison

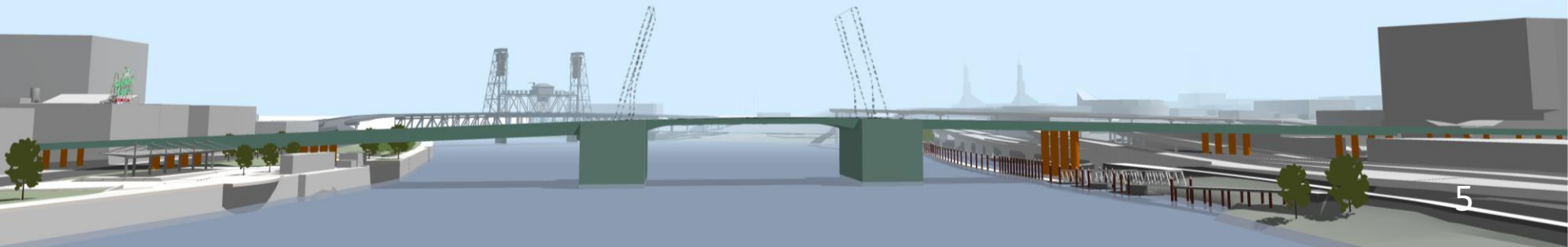
- Long-span Bridge Key Objectives
  - Reduce geotechnical hazard risk by eliminating 1 support on each side
  - Reduce many construction impacts
  - Maintain all vehicular and bike/ped lanes, widths, and connections

Sample Long-span Bridge Concept



Note: Eastbank Esplanade connections not shown for clarity

Sample Conventional Bridge Concept



Project Update

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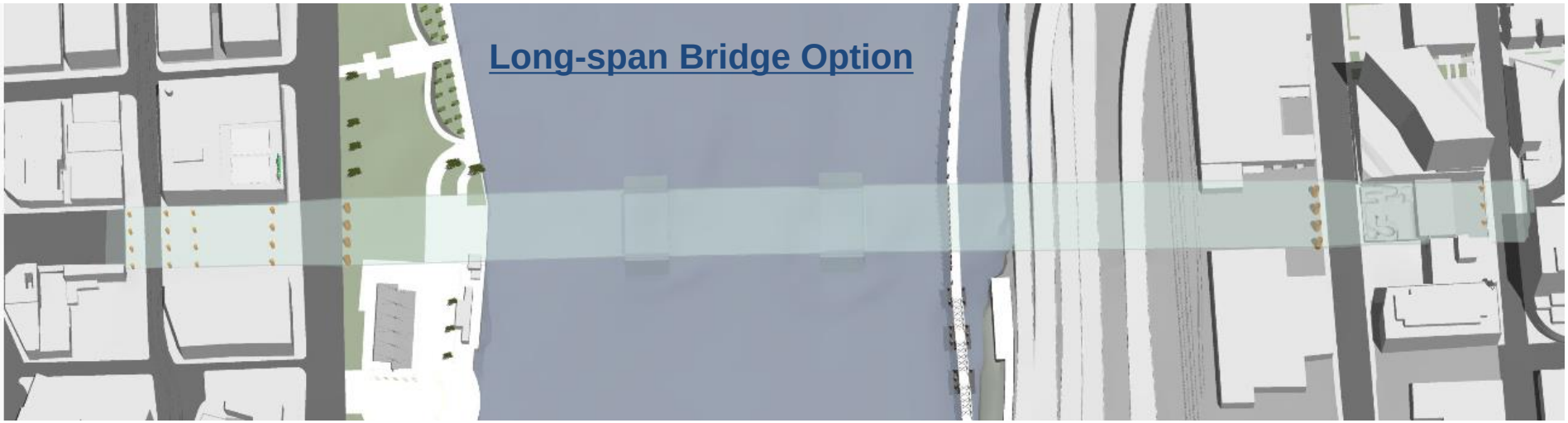
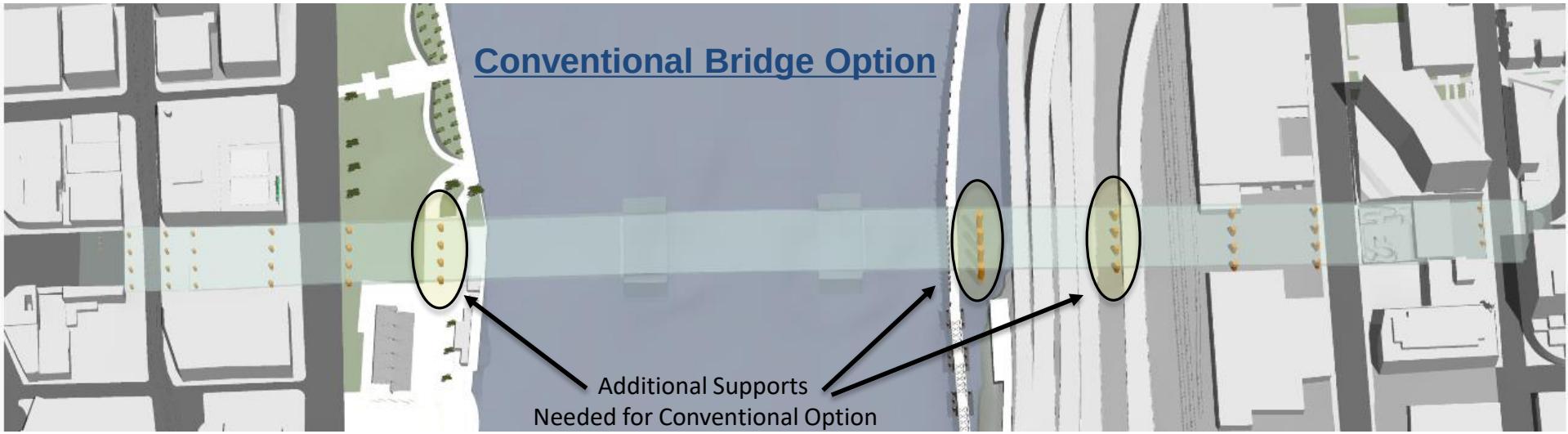
In-kind Replacement: Long-span / Conventional Bridge Comparison





Preferred Alternative Process

CTF's job is to recommend a Preferred Alternative to decision makers

Objective is to make a recommendation based on:

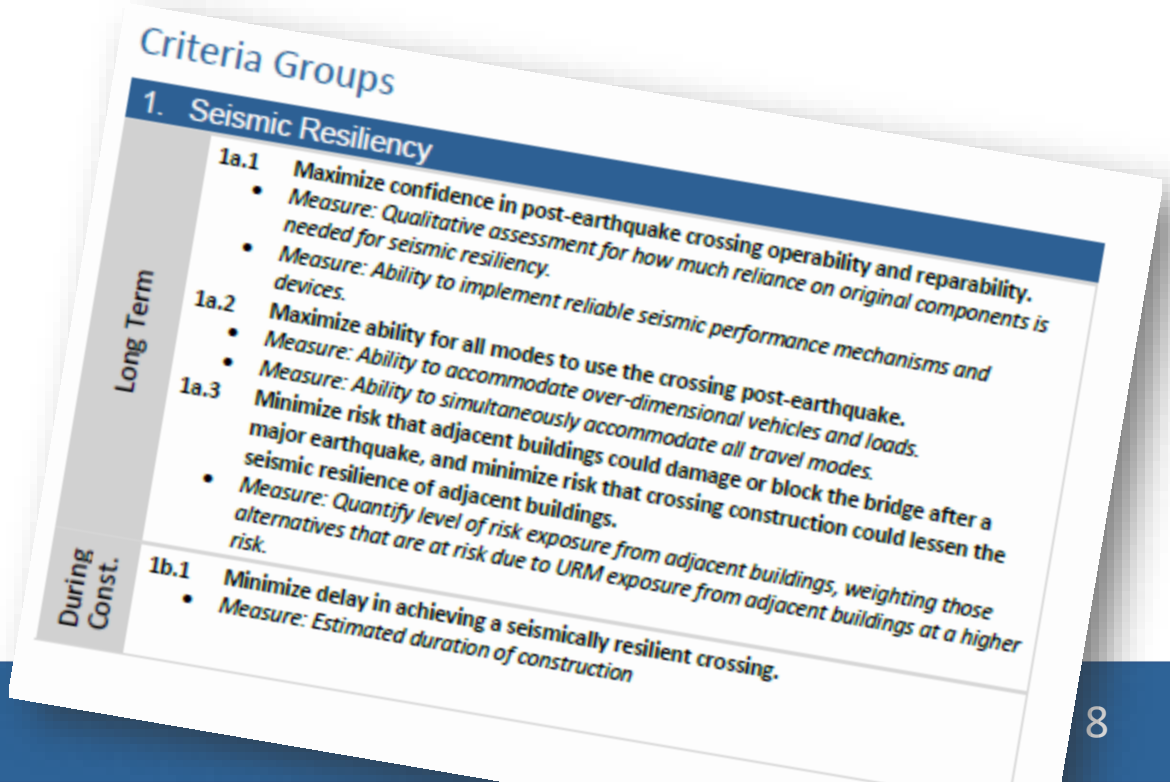
- Recognizing and understanding a broad range of stakeholder values
- Balancing those multiple and sometimes conflicting values
- Comparing alternatives on an "apples to apples" basis
- Exploring tradeoffs among alternatives
- Achieving consensus on the best choice

You have been working through a process to accomplish that objective

Preferred Alternative Process

1. Recognize and understand a broad range of stakeholder values

- Developed **criteria** to represent stakeholder values
- Developed **measures** to rate the performance of an alternative in delivering on those values



Criteria Groups

1. Seismic Resiliency

Long Term

1a.1 Maximize confidence in post-earthquake crossing operability and reparability.
- *Measure: Qualitative assessment for how much reliance on original components is needed for seismic resiliency.*
- *Measure: Ability to implement reliable seismic performance mechanisms and devices.*

1a.2 Maximize ability for all modes to use the crossing post-earthquake.
- *Measure: Ability to accommodate over-dimensional vehicles and loads.*
- *Measure: Ability to simultaneously accommodate all travel modes.*

1a.3 Minimize risk that adjacent buildings could damage or block the bridge after a major earthquake, and minimize risk that crossing construction could lessen the seismic resilience of adjacent buildings.
- *Measure: Quantify level of risk exposure from adjacent buildings, weighting those alternatives that are at risk due to URM exposure from adjacent buildings at a higher risk.*

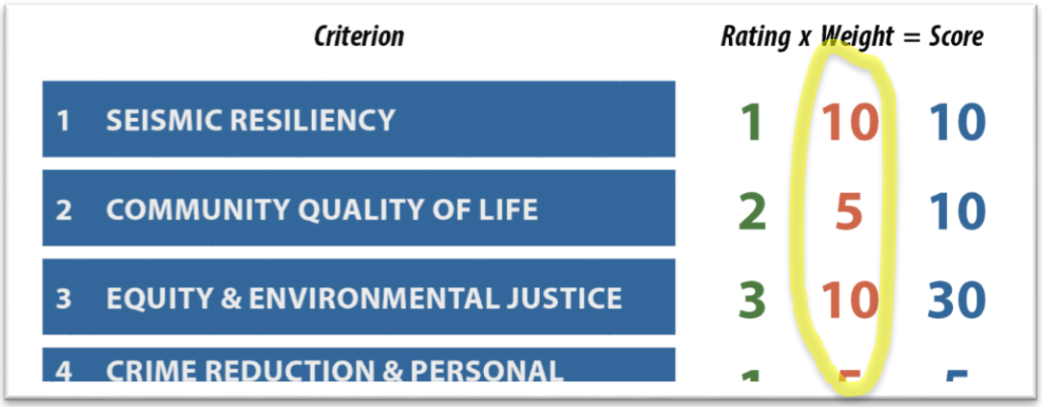
During Const.

1b.1 Minimize delay in achieving a seismically resilient crossing.
- *Measure: Estimated duration of construction*

Preferred Alternative Process

2. Balance those multiple and sometimes conflicting values

- Next step is to assign **value weights** to each of the criteria to reflect their relative importance
  - **Today's meeting** – assign weightings to Criteria Topics
  - February 24th – assign weights to short term and long term subcategories



Criterion	Rating	Weight	Score
1 SEISMIC RESILIENCY	1	10	10
2 COMMUNITY QUALITY OF LIFE	2	5	10
3 EQUITY & ENVIRONMENTAL JUSTICE	3	10	30
4 CRIME REDUCTION & PERSONAL			

Weight = Importance as Percentage of all Criteria Topics

Preferred Alternative Process

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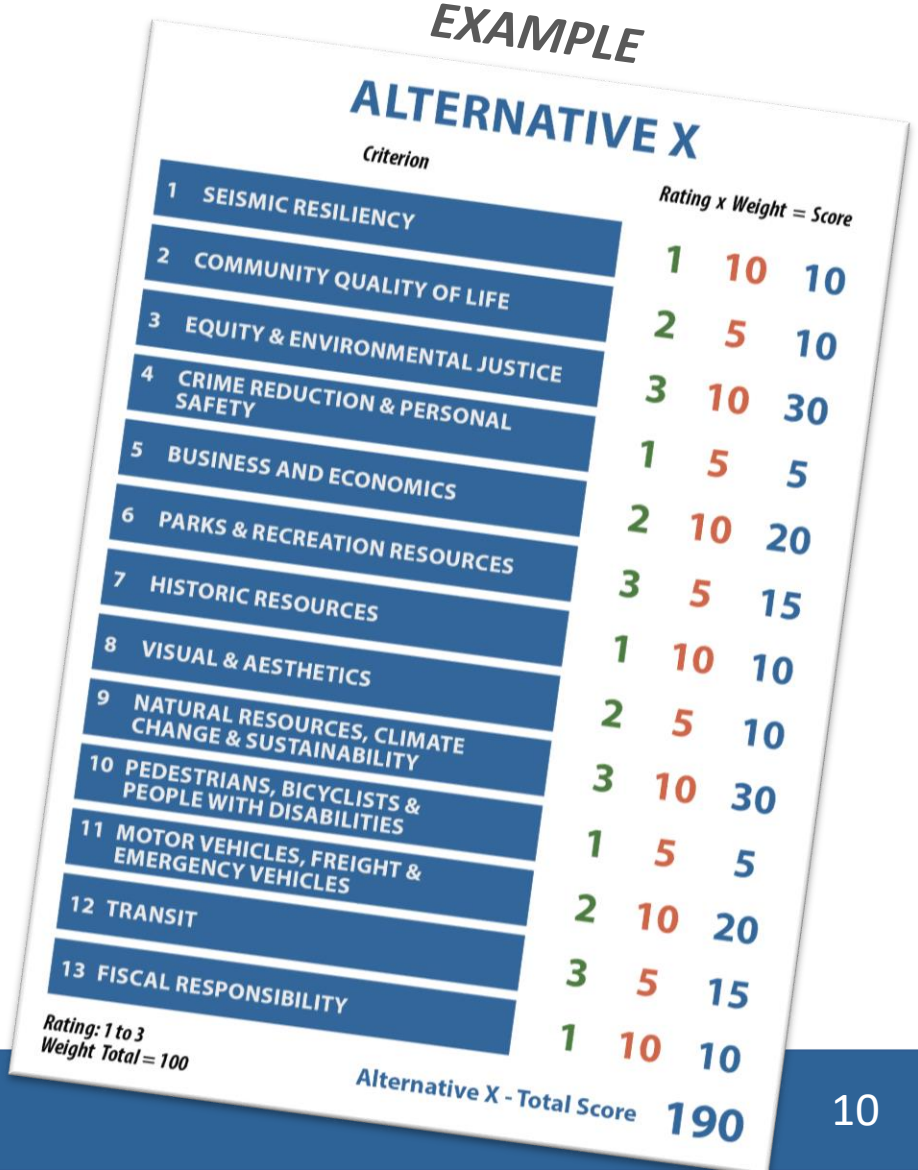
3. Compare alternatives on an "apples to apples" basis

- Calculate a **score** for each alternative
  - Based on performance rating developed by technical staff
  - Value weights developed by CTF



Preferred Alternative Process

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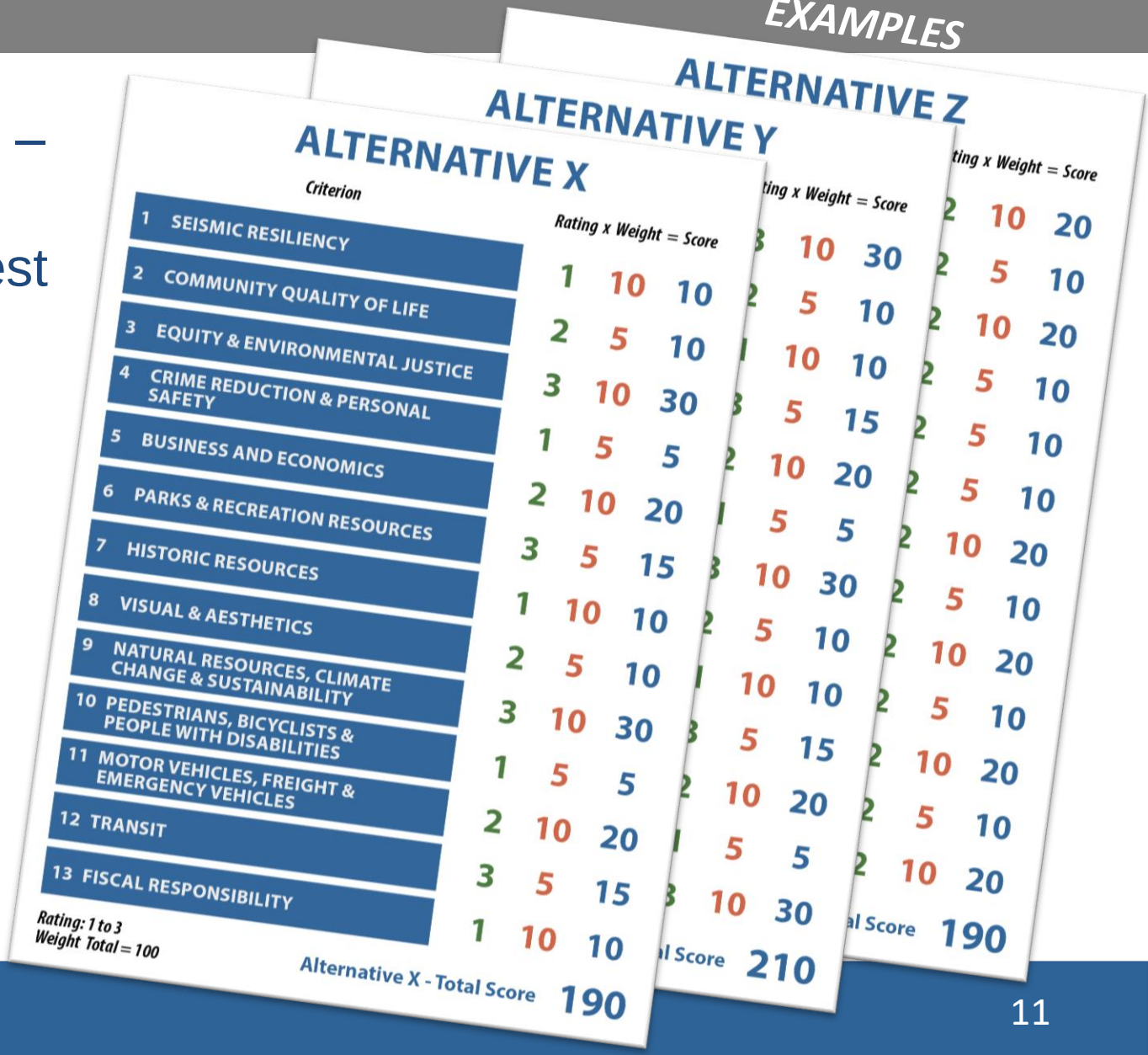
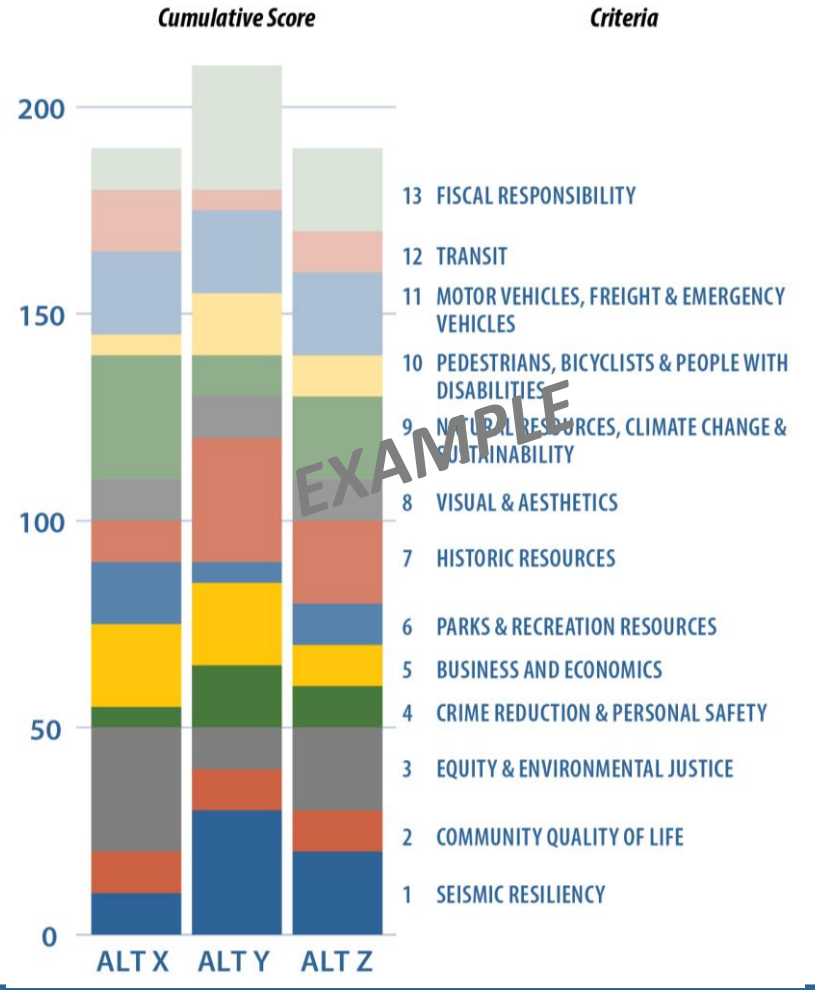
- Compare scores – highest score represents highest total value



Preferred Alternative Process

4. Explore tradeoffs among alternatives

- Apply sensitivity tests to scores
  - To what extent a criterion influences the results
  - To what extent a change in the criterion weight would change the results



Preferred Alternative Process

5. Achieve consensus on the best choice

- Discuss results from previous steps and arrive at a recommendation through discussion

Preferred Alternative Timeline

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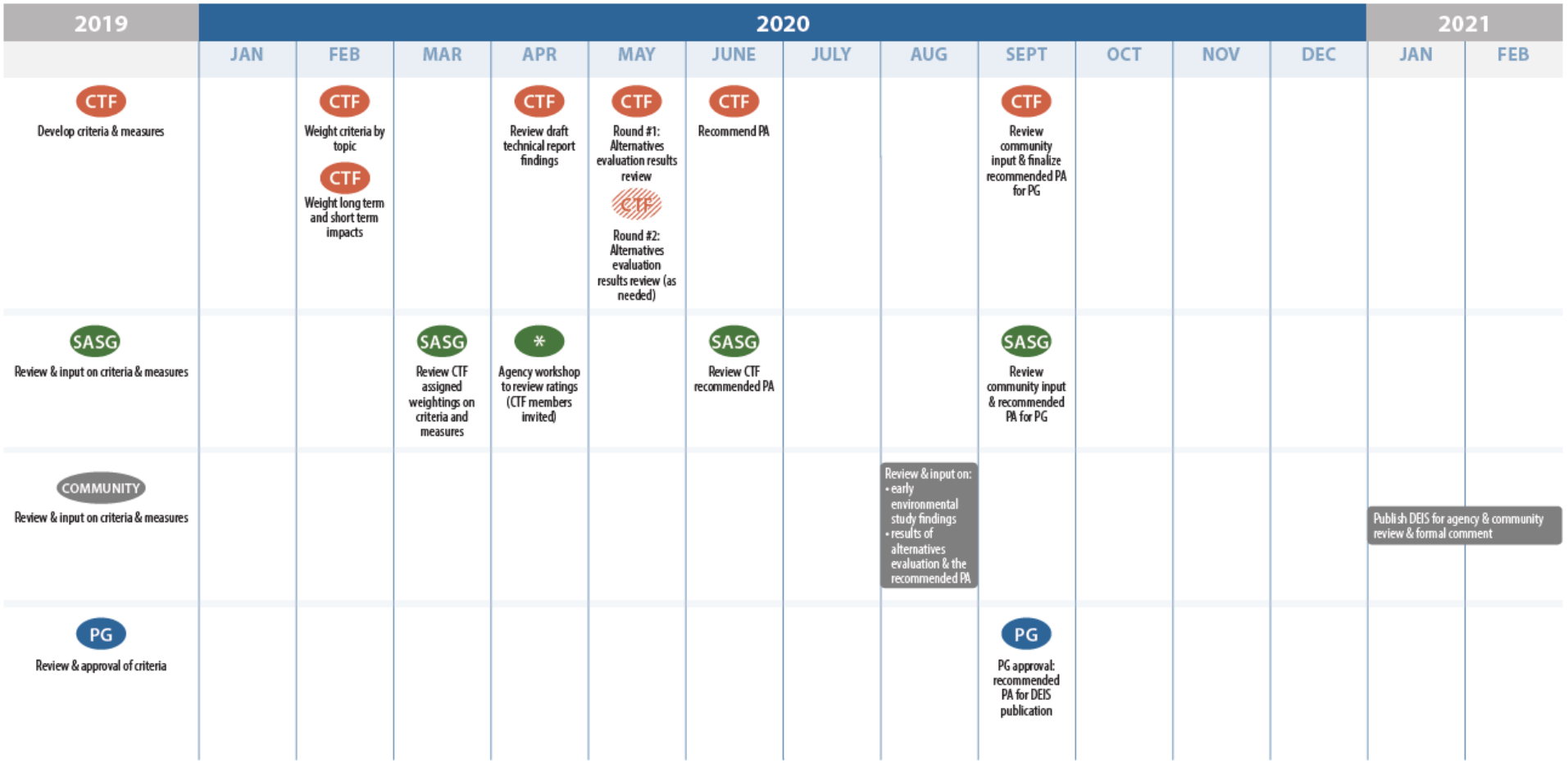
Getting to a Preferred Alternative



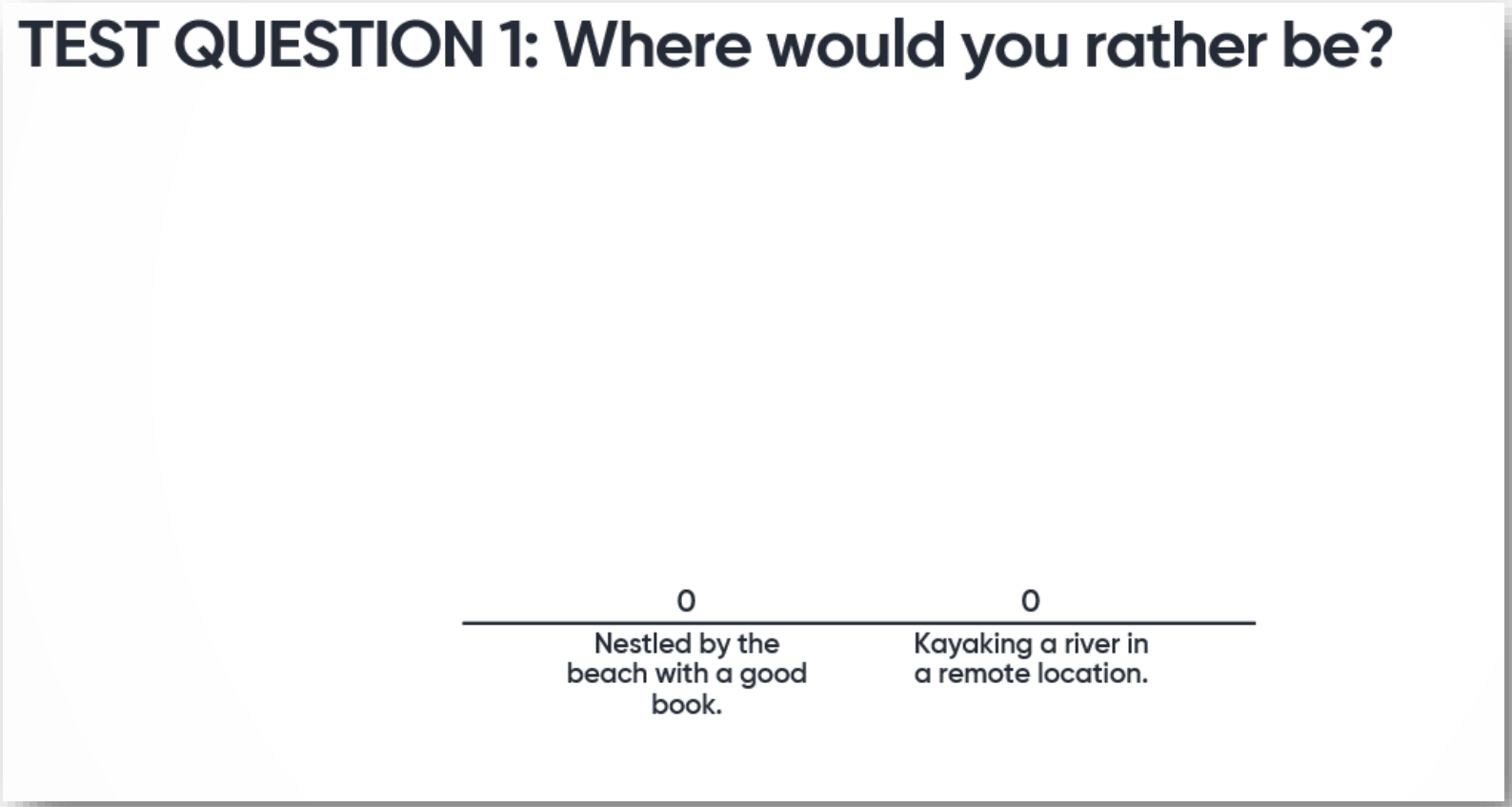
Legend:

PA	Preferred Alternative
DEIS	Draft Environmental Impact Statement
CTF	Community Task Force
SASG	Senior Agency Staff Group
PG	Policy Group

Multnomah County

Evaluation Criteria Topics Weightings

Overview of Weighting Exercise



Evaluation Criteria Topics Weightings

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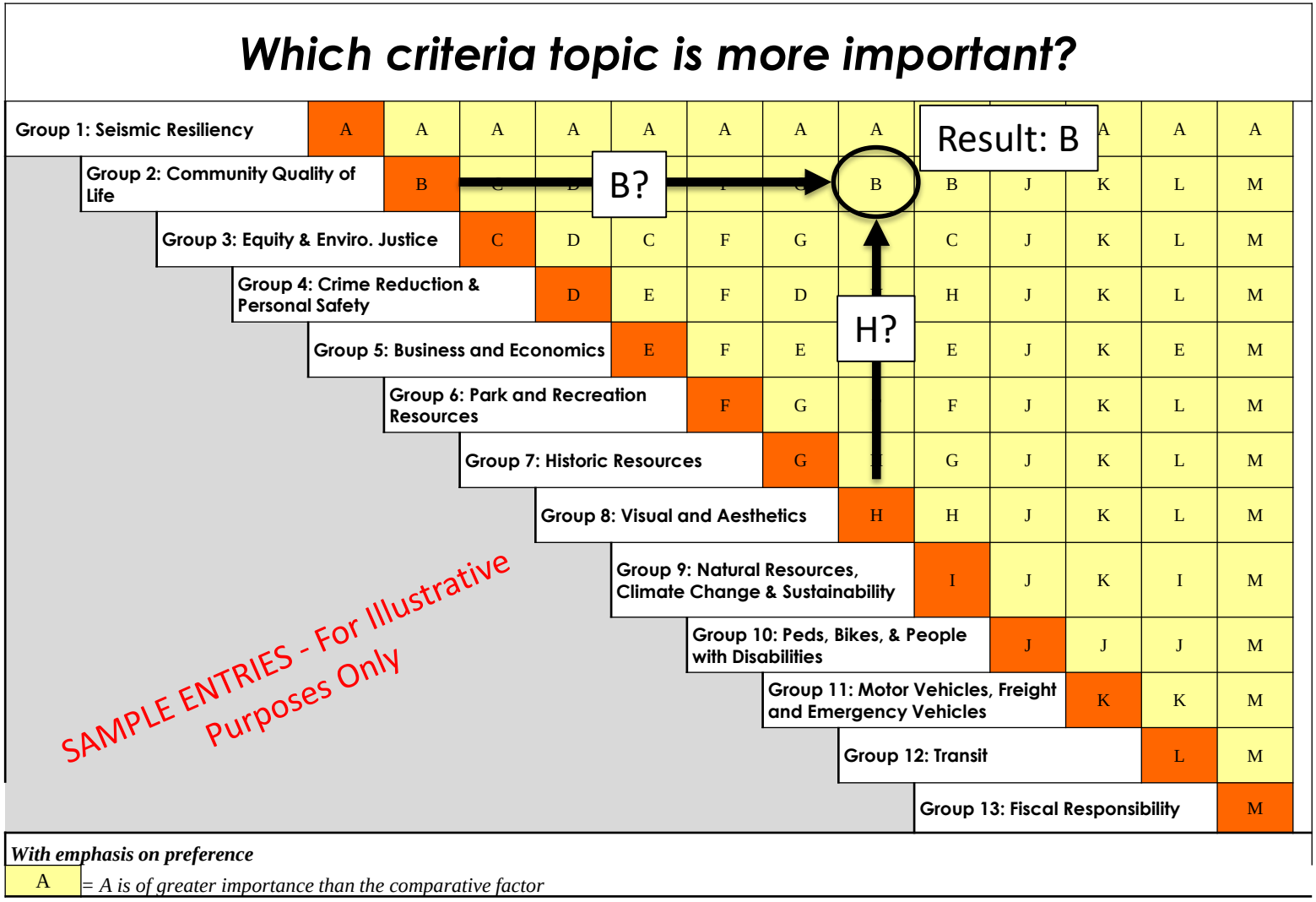


Evaluation Criteria Topics Weightings

Overview of Weighting Exercise

Which criteria topic is more important?													TOTAL	%
Group 1: Seismic Resiliency	A	A	A	A	A	A	A	A	A	A	A	A	13.0	14.3%
Group 2: Community Quality of Life	B	C	D	B	F	G	B	B	J	K	L	M	4.0	4.4%
Group 3: Equity & Enviro. Justice	C	D	C	F	G	C	C	J	K	L	M		5.0	5.5%
Group 4: Crime Reduction & Personal Safety	D	E	F	D	H	H	J	K	L	M			4.0	4.4%
Group 5: Business and Economics	E	F	E	H	E	J	K	E	M				5.0	5.5%
Group 6: Park and Recreation Resources	F	G	F	F	J	K	L	M					7.0	7.7%
Group 7: Historic Resources	G	H	G	J	K	L	M						5.0	5.5%
Group 8: Visual and Aesthetics	H	H	J	K	L	M							6.0	6.6%
Group 9: Natural Resources, Climate Change and Sustainability	I	J	K	I	M								2.0	2.2%
Group 10: Peds, Bikes, and People with Disabilities	J	J	J	M									11.0	12.1%
Group 11: Motor Vehicles, Freight & Emerg. Vehicles	K	K	M										10.0	11.0%
Group 12: Transit	L	M											7.0	7.7%
Group 13: Fiscal Responsibility	M												12.0	13%
													91.0	100%

SAMPLE ENTRIES - For Illustrative Purposes Only

With emphasis on preference

A = *A is of greater importance than the comparative factor*

Using the Matrix:

- Group 5 is labeled "E"
- 5 "E's" assigned
- 91 total matrix selections
- 5 ÷ 91 = 5.5%

Result:
Group 5 has a 5.5% Weighting Factor

Other Notes:

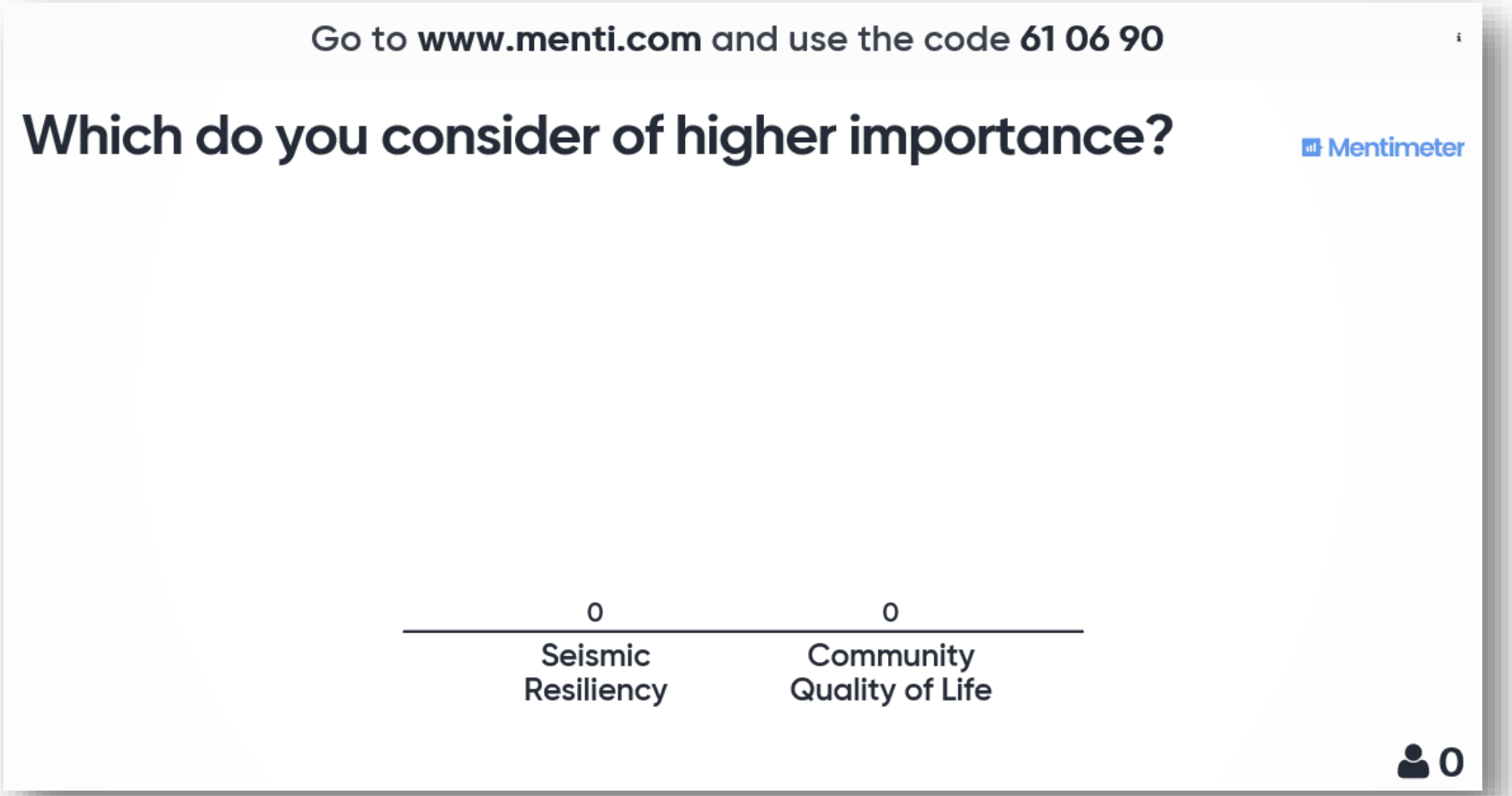
- Max WF = 14.3%
- Min WF = 1.1%

Evaluation Criteria Topics Weightings

Overview of Weighting Exercise

Evaluation Criteria Topics Weightings

Weighting Exercise



Evaluation Criteria Topics Weightings

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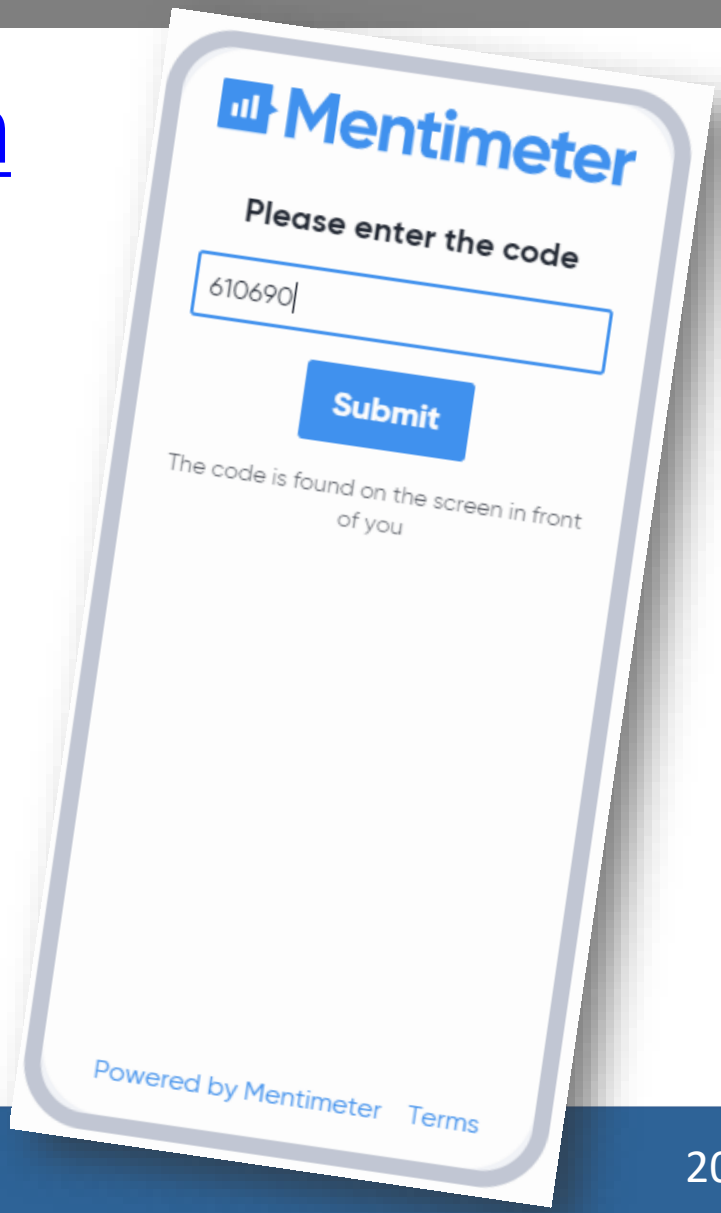
Weighting Exercise

Go to: www.menti.com

Use Code: 610690



Evaluation Criteria Topics Weightings

CTF Discussion:

How does the group feel about the results?

Closing Remarks and Adjourn

Thank you!