Sustainability: A New Approach for Public Works

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Overview

- Description of APWA Center for Sustainability
- Definition of Sustainability in Public Works
- APWA Framework for Sustainable Communities
- Partnerships & Collaboration

American Public Works Association

- International educational and professional association of public agencies, private sector companies, and individuals dedicated to providing high quality public works goods and services.
- 64 Chapters
- Approximately 29,000 members in US & Canada

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What is APWA Doing?

Created the Center for Sustainability to:

- Enable APWA to become the driving force for sustainability in public works management.
- Create an integrated vision for the future, sustainable public works management.
- Build an APWA structure that motivates and enables public works practitioners to act more sustainability.
- Develop the next generation of public works leaders with strong sustainability credentials and commitment.

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How are we going to get there?

- Develop Education & Training Opportunities
- Foster Partnerships & Collaboration
- Work with APWA Chapters
  - Establish sustainability committees
  - Present at conferences
- Web-based Knowledge Center
  - Tools, Best Management Practices, Case Studies
- Advocacy

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What does Sustainability Mean?

APWA Definition of Sustainability In Public Works

Sustainability in public works means seeking a balanced approach for a vibrant community today and tomorrow.

This is accomplished by the delivery of services and infrastructure in an environmentally and socially responsible way and that ensures the best economic choice in the long term.

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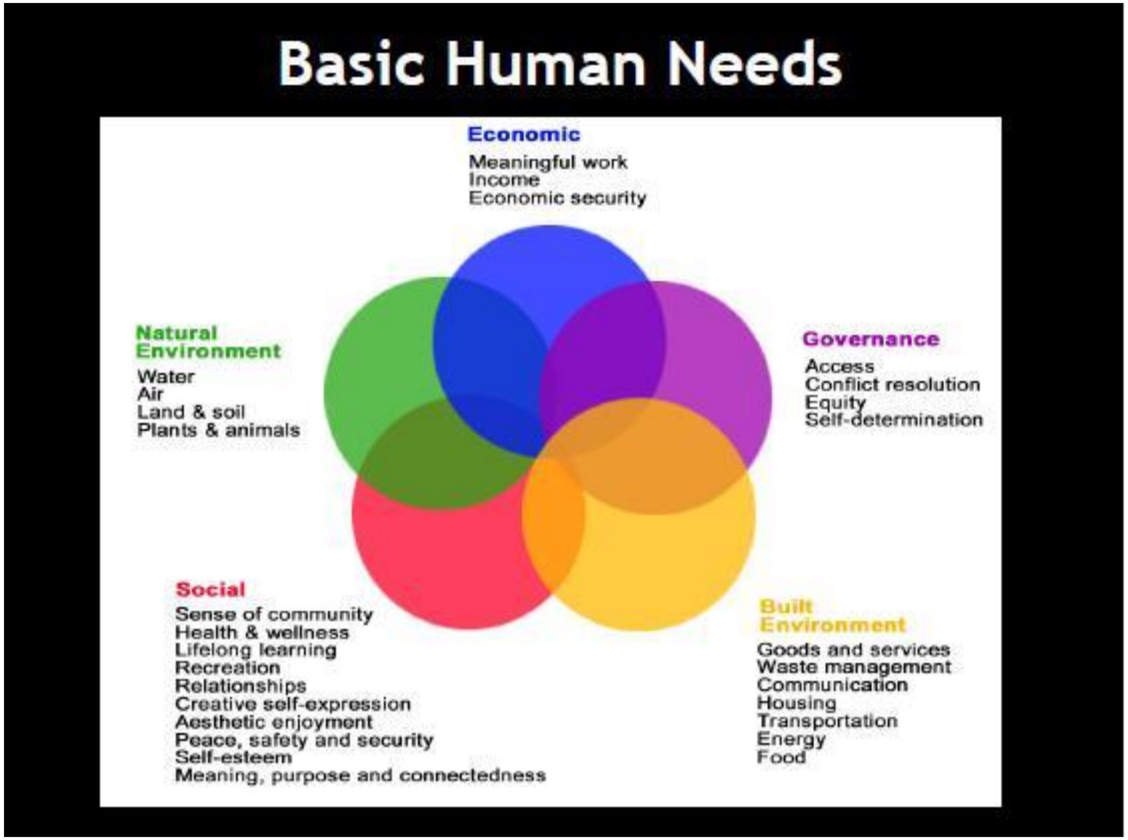
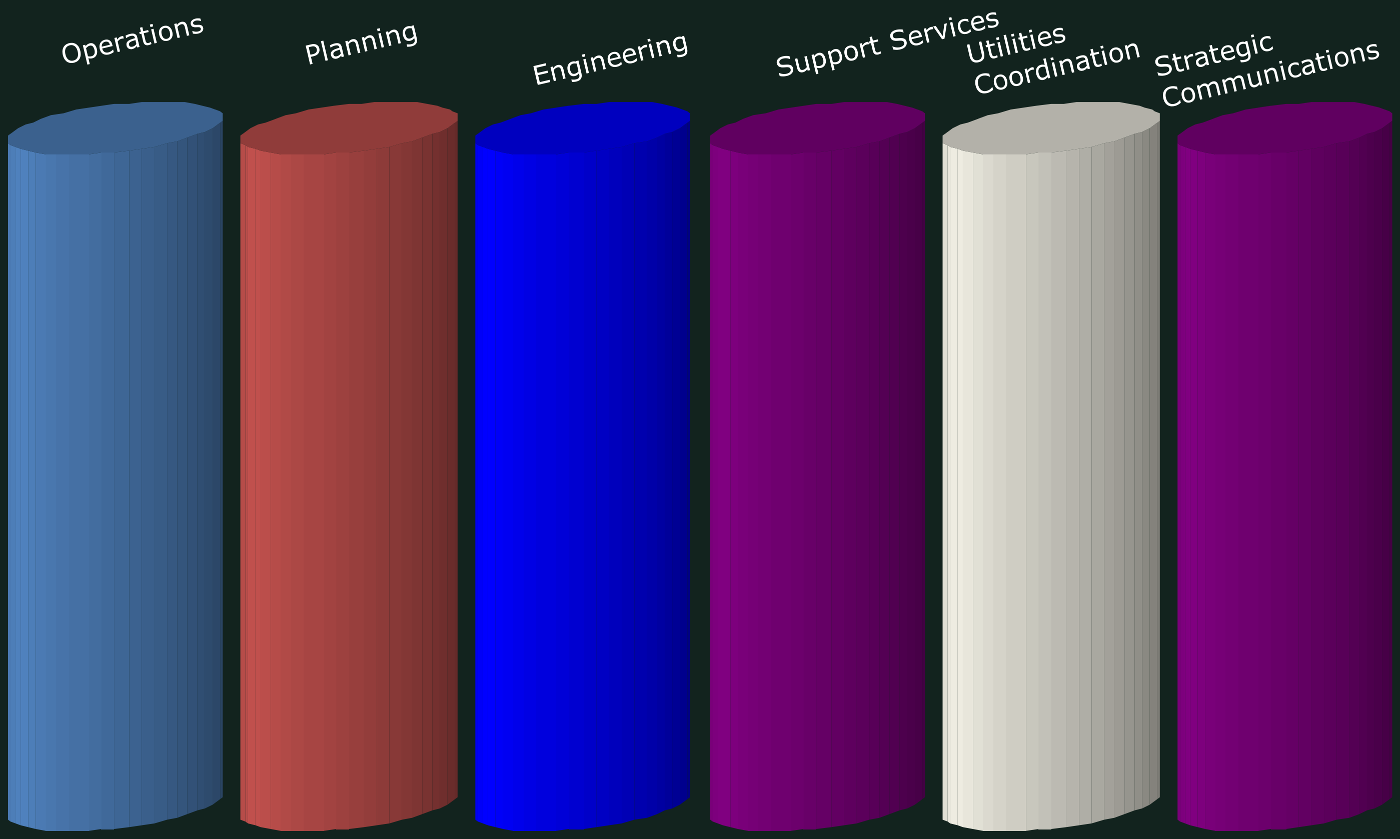
The Community System



- A community is made up of ***interconnected*** systems that function together to provide the quality of life citizens desire

- Adoption of sustainability principles helps public officials to confront community challenges ***systematically*** and ensures stakeholders are aware of the consequences of a wide variety of possible solutions before making a final decision.

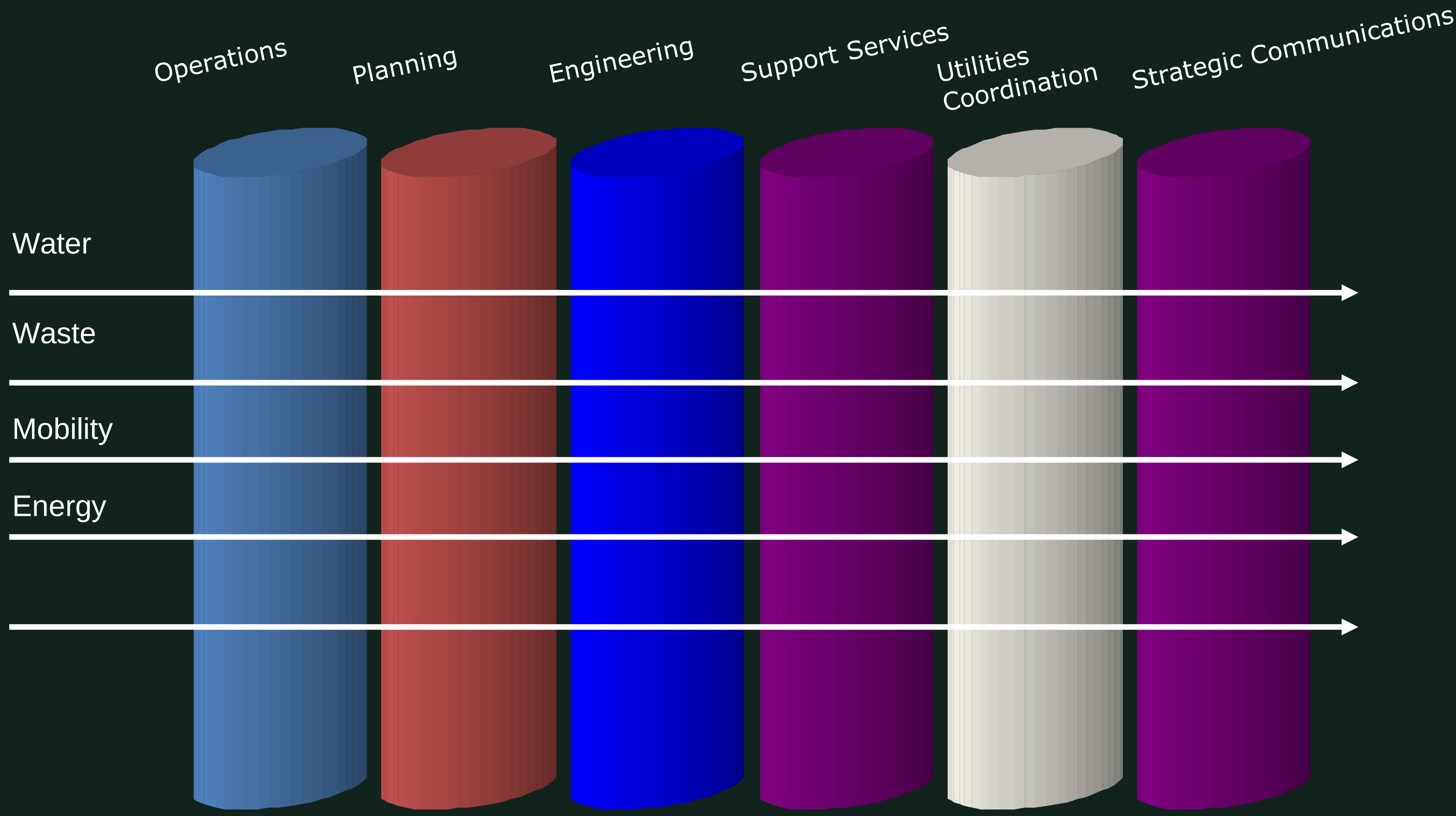
Traditional Structure
How Government Sees Itself



Reference: D. Michael Mucha

Value/Structure Disconnect

How Citizens Experience Us



Reference: D. Michael Mucha

How do we change the way we think to match citizens' expectations?

- Integrated Community System & Multi-Disciplinary Approach
- Change to one part of the system will affect other parts of the system
- Avoid unintended consequences
- Transparency

A New Approach

- *Systems Thinking*
- *Simplify*
- *Exploring*
- *Knowledge*
- *Teamwork*
- *Caring*
- *Efficiency*

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APWA Framework For Sustainable Communities

- *Key is to ask the right questions so that public works can create balanced solutions that deliver the level of service citizens expect in an environmentally and socially responsible way and that ensures the best economic choice for the long term.*
- Applies to project, organizations, departments, labor agreements, etc.
- adopted from, G. Hallsmith "The Key to Sustainable Cities".

APWA Framework For Sustainable Communities

- **Ecological Integrity**
  - How does it impact the Natural Environment?
- **Economic Security**
  - How does it impact the local economy and at what short and long term costs?
- **Empowerment and Responsibility**
  - How does it impact relationships, effective government, and social justice?
- **Efficient Services and Infrastructure**
  - How does it impact the delivery of services and the infrastructure we provide?
- **Health and Wellbeing**
  - How does it impact the wellbeing of people?

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Framework for Sustainable Communities

Leadership required
Manageable Risks
Value Delivered

Action

	Ecology	Economy	Empowerment	Efficiency	Health
	How does it influence the Natural Environment?	*How does it directly influence the local economy and at what short and long term costs?*	*How does it influence relationships, effective government, and social justice?*	*How does it influence the delivery of infrastructure we provide?*	*How does it influence the well-being of people?*
Strengths					
Weaknesses					
Opportunities					
Threats					

Solution

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http://www.apwa.net/centerforsustainability

The Framework

Five Needs: Satisfy five distinct healthy community needs to assure a balanced/ sustainable outcome: Ecology, Economy, Empowerment, Efficiency, and Health.

S.W.O.T.: For any given action there are Strengths, Weaknesses, Opportunities, and Threats.

Traffic Signal: Red, Yellow, Green: This dimension provides an indicator for how well a particular action satisfies a healthy community need. If green, the action provides value, or contributes in a positive way. If yellow, there are manageable risks. If red, there may be fatal flaws that need attention.

Steps For Using The Form

Step 1: Identifying

Clearly identify the action.

Identify a clear topic, action, policy, program or issue you would like to evaluate. Be specific, because this will help focus your discussion on the action most important to you.

Write the action on the top of the form as a statement (e.g. "Building a three-lane roadway cross-section on Main Street," or "Removing glass from the recycling stream").

Step 2: Brainstorming

Complete the framework on the form (get as many ideas as possible).

Brainstorm Strengths, Weaknesses, Opportunities, and Threats in each of the Five Needs categories. Start by asking the question,"So how does what we are proposing influence the economy?" Remember, influence can be good or bad.

Strengths and Weaknesses are things internal to your organization that you have direct control over.

Opportunities and Threats are things outside your control, and you must respond to proactively.

Encourage the flow of ideas. Sometimes there will be overlap. Start in one category that may lead to factors in other categories. Discuss those factors together and put them on the map at the same time so the team can begin to see the relationships and competing factors.

Step 3: Distilling

Refine your brainstorming list to key issues.

After brainstorming all the ideas, begin selecting what you believe to be the most important Strengths and Opportunities and the most concerning Weaknesses and Threats. For any issue, there should not be more than a few for each of the Five Needs categories.

Step 4: Evaluating

Determine how balanced your solution is.

Step back and look it over your prioritized list. What is it telling you? If a Need category has many Strengths and Opportunities, it is likely a green light. If it has some Strengths, but also some Weaknesses and Threats you feel you can overcome, it is likely a yellow light. If there are some significant Weaknesses or Threats that you have not figured out a way to overcome, it is likely a red light. One significant Weakness by itself may warrant a red light.

Step 5: Problem Solving

Find a balanced solution (all Need categories have a green or yellow rating).

Focus the group's attention to the key issues that create red lights. Ask the question, "What can we do differently to turn this red light into a yellow or green light?" Some of those answers may take time to formulate. Create an assignment list for more research and agree to get back together to discuss the solutions.

Step 6: Move Forward

Confirm or assign someone to be responsible for carrying the action forward.

Once all your research is completed and you have a balanced solution, get commitments. Decide who must do what, by when to move the item forward. Pay attention to the specific actions necessary to overcome risks in the yellow lights and innovative actions that turns red lights into yellow/green lights.

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6 Steps

1. **Identifying** --- clearly identify the topic
2. **Brainstorming** – gather as many ideas as possible
3. **Distilling** – identify the key issues
4. **Evaluation** – find balance
5. **Problem Solving** – move from red to yellow or yellow to green
6. **Move Forward** – assign responsibility

Strengths v. Weaknesses

- Strengths/ Weaknesses are **internal** things to your organization that you have **direct control over**

- Opportunities/ Threats are things **outside of your control** and you must respond proactively.

Evaluating

What is your list of key items telling you?

- Many strengths and opportunities = GREEN light
- Some strengths and some weakness/ threats that you can overcome = YELLOW light
- Some significant weaknesses/threats you cannot overcome = RED light.

Tire Gauge Example

Framework for Sustainable Communities

Using Tire Pressure Valve Gauges

Action

Leadership required
Manageable Risks
Value Delivered

	Ecology *How does it influence the Natural Environment?*	Economy *How does it directly influence the local economy and at what short and long term costs?*	Empowerment *How does it influence relationships, effective government, and social justice?*	Efficiency *How does it influence the delivery of infrastructure we provide?*	Health *How does it influence the well-being of people?*
Strengths	Reduces GHGs by 2000lbs per vehicle. Fewer tires in landfill.	Reduces fuel consumption by 130 gallons per year.	Shows City is "walking the talk" when it comes to efficiency and safe vehicles.	Easy to install and replace devices. Extends tire life by 30%.	Safe vehicles for stopping and handling. Good for employees and citizens.
Weaknesses	Disposal of devices and batteries.	Costs $4 per vehicle, unbudgeted.			
Opportunities		Will save on vehicle tire wear by 30%, creating budget for gauges.			More shop tire changes and fewer failed tires to fix in the field.
Threats			Flushing devices left unattended could give City a bad reputation.		

Install Device On All City Fleet Vehicles

Solution

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Partnerships

- NARC
  National
  Mid-America Regional Council

- ICLEI– Local Governments
  For Sustainability

- ASCE/ACEC Sustainable
  Infrastructure Project Rating System

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Partnerships with NARC

***NATIONAL**: Developing the Capacity of Local and Regional Stakeholders to Create, Integrate and Implement Federal Livability Goals*

Mid-America Regional Council:
Creating Sustainable Places

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Partnership with ICLEI– Local Governments for Sustainability

- *Grant proposal: Integrating drought preparedness into long term community sustainability plans.*
- Sustainability Workshop
- Webinars

I.C.L.E.I

Local Governments for Sustainability

USA

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Sustainable Infrastructure Rating System

•Holistic, transformational approach, no other U.S. programs currently fulfilling need

•Consider Triple Bottom Line

•Similar to LEED but focused on civil infrastructure

•Incorporate/reference existing rating systems, as appropriate

Project Rating for Infrastructure Sustainability and Management (PRISM) Levels of Application

Level	Description	Benefits
1	Overall Guidance and Checklists	Provides understanding of sustainability and triple bottom line accounting and application to infrastructure projects.
2	Assessment and Recognition	Step by step process for owner or engineer to perform self-assessment and to indicate areas where improved benefits could be achieved.
3	Operational Imperatives	Larger or more complex projects in planning stages and where individual areas of excellence can be highlighted.
4	Decision Support (future)	Allows balancing of various elements of a project to optimize performance and investment. Assist settlement of differing opinions or approaches with stakeholders or regulatory needs

Questions

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