APA/AICP – Spokane 2014
Green Infrastructure
The Lorax Tree saving our communities

Green Infrastructure – 7 Areas
- Water use – reduce, recycle, reuse – Yes
- Transport (streets)/Infrastructure costs – goods and services – Yes
- Settlement program/patterns – density, diversity – Some
- Energy providers/use - CO2 absorption vs. reduction - Some
- Construction process and materials – Some
- Location/Bio-zone – issues and assets/availability – No
- Ecological/Habitat/Watershed areas – protection/reclamation- No

Barriers to Implementation
- Innovation takes time and investment funding
- Ecological Habitat restoration is a talk time
- Regulatory process is political and often slow
- Peoples beliefs and perceptions change slowly
- Tax incentive programs require funding, cooperation and leadership.

SPEAKERS

Kendra Breiland, AICP | Senior Associate, Fehr Peers, Kendra specializes in all aspects of transportation/planning, including comprehensive plans, multimodal plans, and downtown plans. Over the past 5 years, she has lead citywide transportation plans for Spokane, Kirkland, Tacoma, Kenmore, Burien, & Sequim.

Eric Schmidt, ASLA, AICP RLA | Principal, Cascade Design Collaborative Collaborative . In his 40th year of transforming streets into parks for people, economic engines for cities, and green infrastructure for improving sustainable functions. Eric melds the professions of Planning, Architecture and Landscape into an Urban Design passion.

Mike Taylor | Director of Integrated Capital Management, City of Spokane. Entrepreneur, businessman, and business coach, Mike has served on professional, bank, community, and hospital boards. He’s been recognized with business, professional, and community service awards.
Smart Streets = Green Streets

Start with Why...
Most communities have underfunded maintenance.

We see it ‘n this region too...

A convergence of factors.

Growing Need

Roadway Maintenance

Rating of Conditions in Spokane County

Source: SWTC Horizon 2040 Survey, 2012
Traditional HCM “Level of Service” (LOS) is Auto-Centric

Smart Streets: Using the Public Realm

Treat roadways as public spaces that influence urban environments.

Use all of the public right-of-way to relate to private development.

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Suboptimal Outcomes

Green Infrastructure - CDC

• CDC office commute: 100% non-auto. We bicycle, bus, train, and walk to work.
• New retrofit bio-fuel system heats our neighborhood.
• Our most recent 24 projects will remove over 3 million pounds of CO2 from the atmosphere (60 thousand pound average per project).
• Our most recent 30 projects have achieved 100% on-site primary water treatment with infiltration as the final treatment step. Our most recent water auditor recorded a 30% reduction in water use per project.
• Our recent green roof and green wall projects have reduced building energy consumption and site costs while extending the system’s life cycle.

Walking the talk?

Personal / Professional Actions

1. Do No Harm.
   Keep nature’s Green Infrastructure (GI) intact.

   It worked for your grandparents.

3. Strive for Interconnected GI (corridors of green).
Parks and green streets will help densify urban areas.

   GI/mossy and greenish can go a long way.

5. Plan and design for CHANGE.
   Change is inevitable.

6. Each project is incremental and cumulative.
   Make sure that you do not create barriers for future projects.

7. Plan and design for the next 50-100 yrs.
   Make projects affordable yet investable.

CDC Principles for Guiding Green Infrastructure

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**CDC Incubates Innovative Green Infrastructure Ideas**

- **CO2**
- **Water**

**CDC Project Overview**

1. **Planning and Public Spaces,**
2. **Green Walls & Rooftops**

- **Mimicry of Nature**

**Use green infrastructure to reduce waste and improve water quality**

**CDC Community Planning and Green Infrastructure Design**

Projects are holistic, collaborative and broad in the sense that nothing is too big or too small to improve upon. We plan to build:

- Largest project is 2,000+ acre economic and environmental design master plan.
- Smallest project is a private green rooftop.
- 95% Public work – over 50% are repeat clients from local Northwest to as far as New Zealand and China.

**Sustainable Master Planning**

- **Centennial Park in Electra North Fremont**
- **Auburn, WA, 2009**
  - K-12 school – green courtyards
  - Nine rain gardens with native vegetation
  - 100% on-site primary water treatment and infiltration
  - Outdoor education

- **Muckleshoot Tribal School**
  - Auburn, WA, 2009
  - K-12 school – green roof/tanks
  - 100% dependent on potable water reuse
  - 100% on-site primary water treatment and infiltration

- **Watershed:**
  - Design collaboration
  - 2013
  - King County
  - Carbon reversal via sequestration, innovation, or use reduction.
Bainbridge City Hall Green Parking, Bainbridge Island, WA, 2000
- Local farmers market
- Parking and civic lawn
- Grass "paving"—structure and infiltration
- Meeting parking code requirements with a park

“Green” Parking Lot

Greenroof - reducing energy demands

Smart Growth TOD/NOD

Cottage Grove Park Project, Seattle, WA, 2007
- Programmed spaces for all ages and activities
- 100% on-site water infiltration and primary treatment
- Neighborhood park and urban agriculture
- Connections to larger stream restoration and GI

Community Park Design

CDC Project Type 3. Green Streets

Complete and Green Streets
Complete Street/Green Street

- Multi-way Boulevard
- 2-mile length with 1,300 trees, 100% permeable pavers
- 80% tree canopy coverage within 10 years
- 10+ degree average heat reduction

**Downtown Segment of Pendleton Ave., Joint Base Lewis-McChord, WA, 2014**

**Complete Street/Green Street**

- Green Elements
  - 25% planted rain gardens
  - 60% permeable paver access lanes
  - 25% asphalt roadway
  - 10% concrete sidewalk
  - Other factors
    - 100% water quality and infiltration functions within ROW
    - No ponds no vaults
    - LED lights
    - Establishment irrigation

**Multi-functions**

**Park Lane | Kirkland, WA**

**100% Stormwater infiltration**
Inspirational Green Infrastructure

Woodinville | Community Master Planning

Integrating Infrastructure Ideas

APPROACH
Designing “green streets”
- Community values
- Economic values
- Environmental values
  and then integrate
- Engineering program and design

• Economic revitalization
• Design places for gathering
• Activate the street
• Expand the mixed-use core and street grid for pedestrians and parking
• Develop public – private partnerships
• Maximize – LID elements

Bothell I Economic and Environmental

Narrow ROW – alternating vs. linear

Develop a Design Framework/Rhythm
Match Street Typology to Users

Proto-typical | Roadway Design

- Roadway design for non-motorized uses
- Parking solutions
- Pavement options
- Low Impact Development (LID)
- Lighting and utilities
- Sidewalks and ADA accessibility
- Landscape elements
- and vehicles/access

Match Street Typology to Users

Green Stormwater Infrastructure

Woodinville | Concept to Standard Details

Roadway design for non-motorized uses
Parking solutions
Pavement options
Low Impact Development (LID)
Lighting and utilities
Sidewalks and ADA accessibility
Landscape elements
and vehicles/access
Stormwater Integration

- Goals – 3 requirements to apply “integrated funding” to projects
  - Removes Stormwater from Combined System or MS4
  - Street infrastructure must be in need of repair
  - Must address either sewer or water line as well

Current Projects

- Integrated Approach
  - ICM/Department Purpose and Design – continuous coordination
  - Sustainable and affordable (long-term) approach which includes Green Infrastructure maintenance
  - Addressing more than regulatory requirements
  - Ensuring multiple benefits for each project
  - Guaranteed timely and top-quality delivery

Challenges

- Current process has us integrating too late
  - Example: Havana - started as water only → bike lanes, stormwater, paving
  - Cost of integration – something gets delayed
  - Acceptable levels of risk (from Programmatic to Project specific)
More Challenges

- Finding plants that work in dry climate
- Managing expectations
  - Maintenance requirements for Neighborhood preference (which can vary)
    - Example: Crestline

On-going Goals

- ICM team/business model
  - Strategy team early in the process to manage project selection (based on LINK Spokane prioritization)
  - In-house project & program management
  - Realign and redefine standards for actual needs (swale and road widths etc.)
  - Continuous Process and Project Review with maintained turnaround time
- Green Infrastructure Management Contract
  - City's Core Competencies
  - Consistency in maintenance standards/community expectations

Video – a short story
Pendleton Multiway Boulevard
– a very green street

Future State

- LINK Spokane (20-year planning)
  - Integrated planning based around City goals and visioning
  - Infrastructure solutions to support higher level goals
  - Prioritization Matrix to basis of capital program
- Forest Spokane
  - Looking at City-maintained green space and maximizing benefits
  - Neighbors take ownership of maintenance expectations

Questions?

Eric Schmidt
Eric@Cascadedesigncollab.com
206.628.3113