Future City’s 2019 Eye on Engineering Webinar
November 12th, 2019

The webinar will begin in a moment...
Future City’s 2019 Eye on Engineering Webinar
November 12th, 2019
Housekeeping

• The platform we are using is GoToWebinar

• If the sound quality is not good, a teleconference line is available:
  - Phone number: (213) 929-4232
  - Access Code: 475-507-792
  - Audio PIN: Shown after joining the webinar

• A recording of this webinar will be posted on futurecity.org/resources in the next few days and emailed to everyone who signed up.
How to ask a question:

• Type your questions in the “Question” space in the webinar control panel.

• We’ll pose as many as possible to the speakers at the end of the webinar.

• Remember to direct your question to the speakers themselves... general questions about the Future City program can be found in the Program Handbook, or emailed to Info@FutureCity.org
Transportation and Traffic Engineering
HELLO!

My name is Jennifer Warner Hayman

I am here because I LOVE my career as a transportation & traffic engineer.
I have always **LOVED** math, science, & problem solving

**Elementary/Middle School:**
- Participated in fun, STEM summer and after-school programs (like Future City)

**High School:**
- Took advanced math & science classes

**College:**
- Studied Civil Engineering

**Now:**
- Work as a Transportation & Traffic Engineer!
What is “Transportation”?

- Traveling from one place to another
- Movement of people and goods

Don’t believe the hype:
Transportation is not just about “Cars”
How did you (and your classmates) travel to school today?
We call all those different types of travel “Multimodal Transportation”
<table>
<thead>
<tr>
<th>Multi-</th>
<th>-modal</th>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>more than one</td>
<td>methods</td>
<td>travel from one place to another</td>
</tr>
<tr>
<td>many</td>
<td>forms</td>
<td>movement of people and goods</td>
</tr>
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<td>different</td>
<td>types</td>
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**Multimodal Transportation**

- many different methods of traveling from one place to another
- Examples: car, bus, bike, walking, train, airplane, boat... and more!
Multimodal Transportation Infrastructure

- Roads
- Signs
- Traffic signals
- Parking lots
- Roads
- Bus Stops
- Transfer Centers
- Bus Lanes
- Roads
- Bike Lanes
- Bike Paths
- Bike Parking
- Sidewalks
- Crosswalks
- Curb Ramps
- Walking Paths

- Train Tracks
- Train Stations
- Rail yards
- Airports
- Flight paths
- Ports
- Channels
- Canals
- Locks
Engineering the Infrastructure

- Buffered Bike Lane
- Traffic Signal
- Sidewalk
- Crosswalk
- Road/Pavement
- Signs
Engineering the Infrastructure
Engineering the Infrastructure
Engineering the Infrastructure

- **Type 1 Curb Ramp**
  - **Slope:** 0.00% Max slope
  - **Turning Space:** 4'-0" Min
  - **Detectable Warning Surface:** 1 Typ

- **Notes:**
  1. Side Flares 10.00% Max Slope
  2. If the turning space is indicated to be less than 4'-0", construct side flares 8.33% Max slope.
  3. Curb ramps require a turning space with a maximum cross slope and longitudinal slope of 2.00%.
  4. Where pedestrians perform turning maneuvers, see details for locations and dimensions.

- **Plain Cement Concrete Depressed Curb**

- **Sidewalk Area**

- **See Note 28**

- **See Note 14**
Engineering the Infrastructure
Engineering the Infrastructure
Engineering the Infrastructure

Stopping Sight Distance

VPC

VPT

Length of Crest Vertical Curve (L)

h₁

h₂

G₁

G₂

VPI
Engineering the Work Zones

Figure 6C-1. Component Parts of a Temporary Traffic Control Zone

Legend:
- Direction of travel
- Channelizing device
- Work space
- Sign

- Downstream Taper
- Buffer Space (longitudinal)
- Work Space
- Activity Area
- Shoulder Taper
- Transition Area
- Advance Warning Area

- Termination Area

Note: See Tables SH-2 and SH-3 for the meaning of the symbols and/or letter codes used in this figure.
Engineering the Traffic Systems
Engineering the Traffic Systems
What does a regular day look like for a transportation engineer?
“an international [group] of transportation professionals who work to improve mobility and safety for all transportation system users and help build smart and livable communities.”
Andrew Sargeant

American Society of Landscape Architects
What is a Landscape Architect?

Presented by: Andrew Sargeant

11/12/19
4:00 pm
Landscape Architects......
make buildings
make trees
make trouble
make pizza
Landscape Architects... MAKE PLACES
Places that help fight.. 
climate change 
environmental hazards 
homelessness 
unsustainable development 
AND THE LIST GOES ON!
Design Process
Work in Teams
Old to New
All kinds of Technology
Pioneering VR
Present Our Ideas
Then Get Them Built
From Screens to Reality
Thank you!
Standards for Safety

November 12, 2019 | Diane Haithcock
Standards Mission:

An innovative Standards development organization making the world a safer, more secure, more sustainable place through leadership, collaboration, honesty, integrity, and transparency.
Why Standards Matter?
DESIGN PROCESS

1. DEFINE
   - Develop a unique problem statement

2. RESEARCH
   - Conduct thorough investigation

3. CONCEPTUALISE
   - Brainstorm ideas

4. PROTOTYPE
   - Build models

5. TEST
   - Evaluate ideas

6. CONSTRUCT
   - Implement the best solution

7. END-USERS
   - Engage target audience

8. CLIENT
   - Obtain feedback

9. IMPLEMENT
   - Practical application

10. WHICH IDEAS ACTUALLY WORK
    - Validate ideas
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Garage Doors, UL 325

Mass Notification Warning System
MNS or MNWS

Mass Notification, UL 2572

Smoke Alarms, UL 217
STP Membership

- Producers
- Testing & Standards Organization
- Supply Chain
- Authorities Having Jurisdiction (AHJ)
- Government
- Consumer
- General Interest
- Commercial/Industrial Users
Open Process:

1. Proposal submitted
2. Consider comments
   - Preliminary Review (optional)
   - Ballot & comments
3. Comment Resolution
   - Recirculation
   - Publication
Voting

- Affirmative, with or without comments
- Negative, with comments*
- Abstain

* IMPORTANT!!! A negative ballot without comments is treated as an abstention when determining consensus
The **majority** of the voting membership submits a ballot; of the ballots received, **2/3 are affirmative**, excluding negatives without comments and abstentions.
Standards Technical Panels (STP): 3,827
Standards: 1419
UL Harmonized Standards: 479

- ANCE: 79
- CSA: 186
- IEC: 177
- ISA: 21
- ULC: 16
- ISO: 3
You never know what will lead to change...

https://www.youtube.com/watch?v=D7T43OmErmU
UL 217/268 & Foam Smoke Signatures

Flaming Wood
Flaming Foam
Flammable Liquid
Flaming Paper
Smoldering Wood
Smoldering Foam

Mean Smoke Particle Count (cm²)
Mean Smoke Particle Size (micron)

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Engineering and Engineering Technology

Spectrum of Technical Job Functions

Test and Evaluation
Product Design
Development
Manufacturing
Production
Operation, service and maintenance
Distribution and Sales
Research
Complex Analysis
Complex Design
Engineering
Engineering Technology

More theoretical
More Application
Third-Party Certifications
## Principles of Fire Safety for your Future City

<table>
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<tr>
<td><strong>Prevention</strong></td>
<td>• Practices and safeguards to prevent the outbreak of fire</td>
</tr>
<tr>
<td><strong>Detection &amp; Communication</strong></td>
<td>• Detection of fire followed by alarm to occupants and fire service</td>
</tr>
<tr>
<td><strong>Occupant Safety</strong></td>
<td>• Safe egress of occupants</td>
</tr>
<tr>
<td><strong>Containment</strong></td>
<td>• Containing the fire and all of its consequences in as small an area as possible</td>
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<tr>
<td><strong>Extinguishment</strong></td>
<td>• Extinguishment of fire by fire fighters through suppression and protect the surrounding environment</td>
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</tbody>
</table>
Please visit UL.org. Thank you!

Empowering Trust™
They simplify product development, reduce unnecessary duplication, lower costs, increase productivity, promote safety, and permit interchangeability, compatibility, and interoperability. They help to advance scientific discovery, and keep people safe by minimizing injuries and protecting key environmental resources.
Have a question for our panelists?

Type it into the question space in the webinar control panel now.

Questions & Answers

Jennifer Warner Hayman

Andrew Sargeant

Diane Haithcock
Thank you to Future City’s Finals Sponsors & Partners
A big thank you to our guests!

If you have any questions or comments, you can email Info@FutureCity.org

Please take the short survey that comes up when you leave the webinar. It helps us fit future events to your needs/interests.
Goodbye