



FHWA Sustainable Pavements Program: The Movement Toward More Sustainable Pavement Systems

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Disclaimer

Except for any statutes or regulations cited, the contents of this presentation do not have the force and effect of law and are not meant to bind the public in any way. This presentation is intended only to provide information to the public regarding existing requirements under the law or agency policies.



Acronyms

- EO Executive Order
- EPD Environmental Product Declaration
- GTR Ground Tire Rubber
- FLCAC Federal LCA Commons
- LCA Life Cycle Assessment
- LCCA Life Cycle Cost Analysis
- M&R Maintenance and Rehabilitation
- PCR Product Category Rules



Vision and Mission

To advance the knowledge and practice of designing, constructing, and maintaining more sustainable pavement through:

- Stakeholder engagement
- Education
- Development of guidance and tools

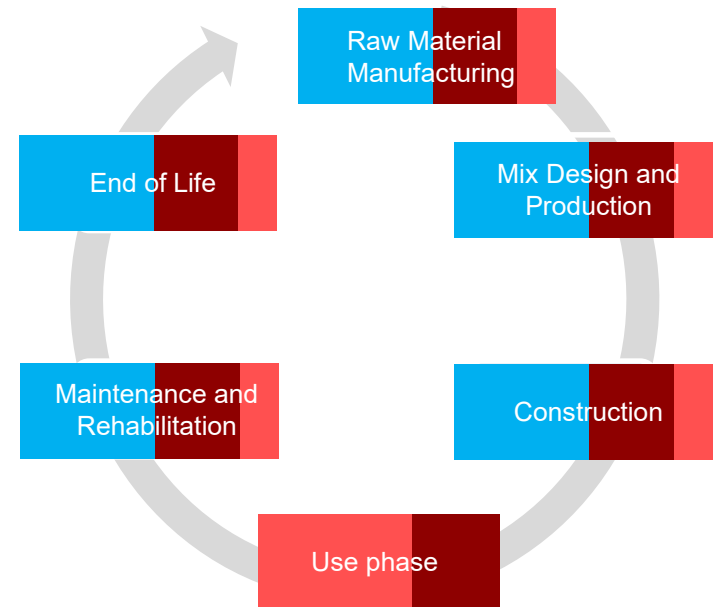
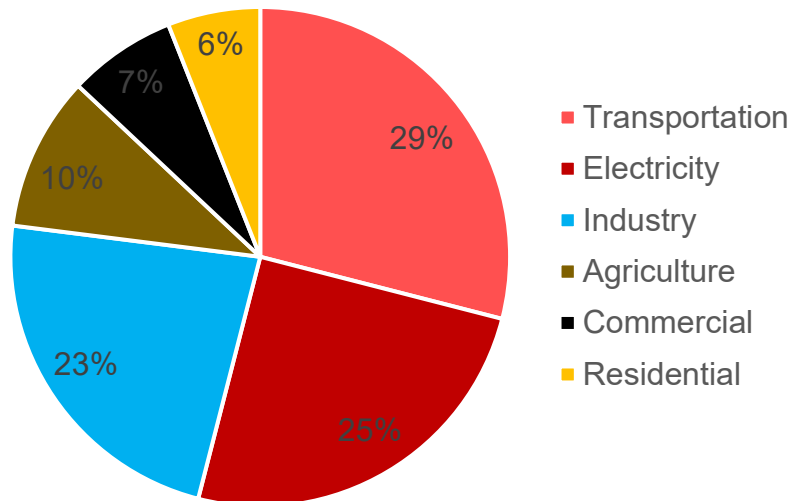




Embodied Carbon

- Pavements are the part of transportation system.
 - A sector with high GHG emissions (~29%).
 - These estimates include operational emissions.
 - State DOT can have decision-making influence over embodied emissions.

2018 U.S. GHG Emissions by Sector





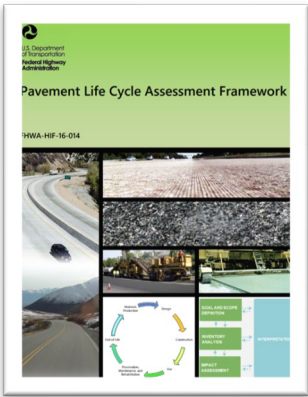
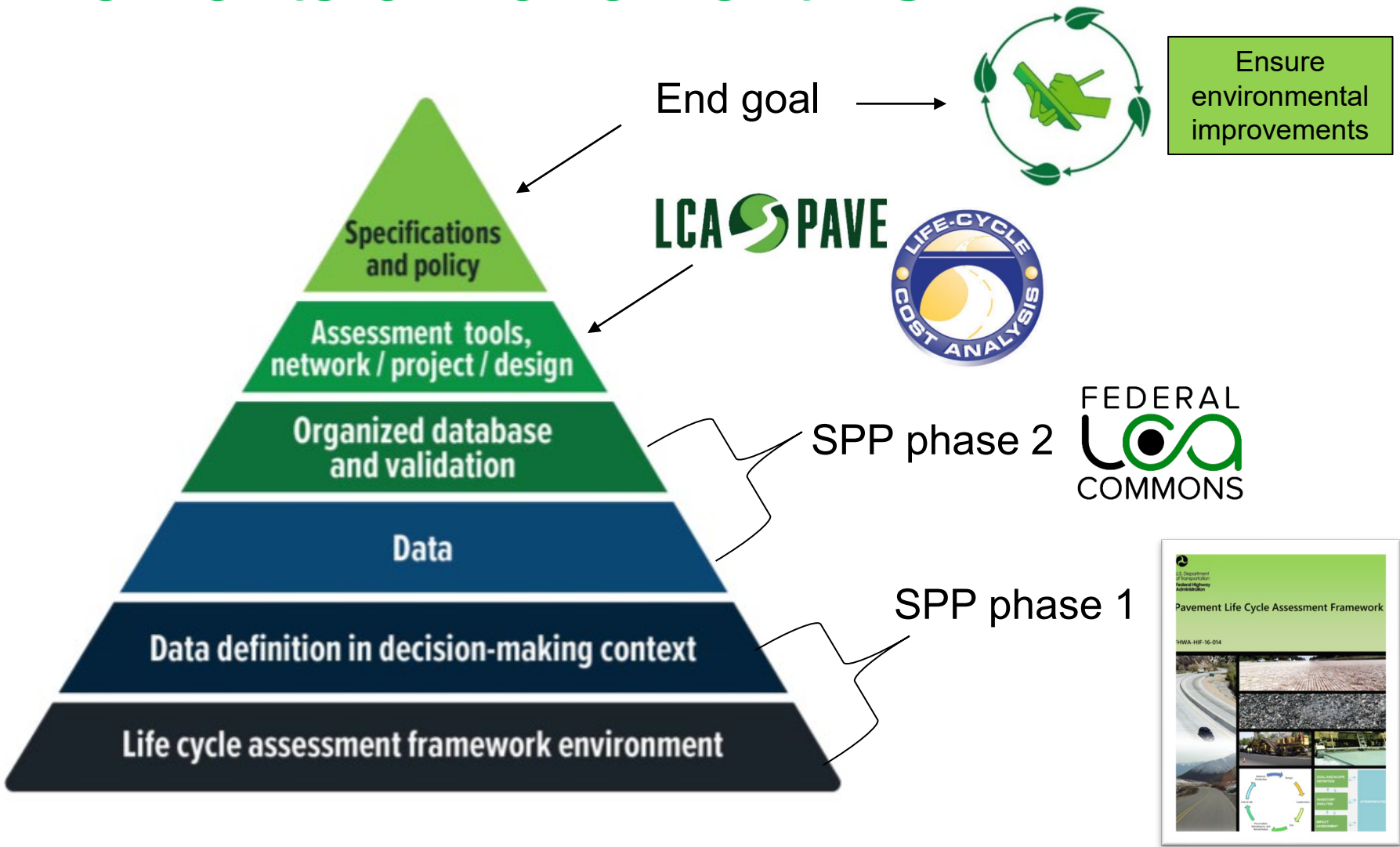
“Feel Goods” vs. Metrics

- Incorporate Waste Materials
 - Plastic
 - Ground Tire Rubber
- Recycle
- Increase Durability
- Use of Local Materials

**You can't improve what
you don't measure**



Elements of Pavement LCA

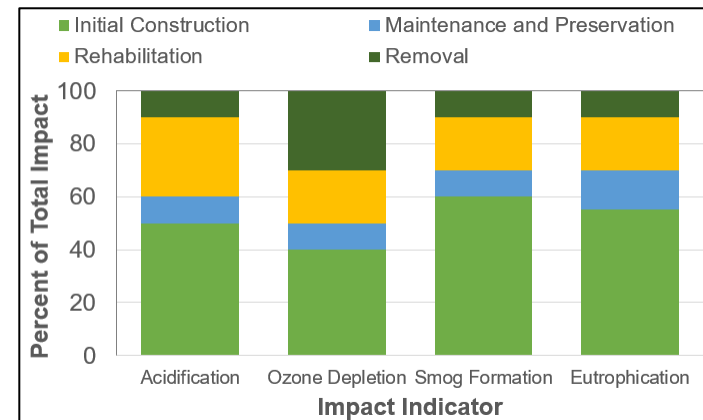
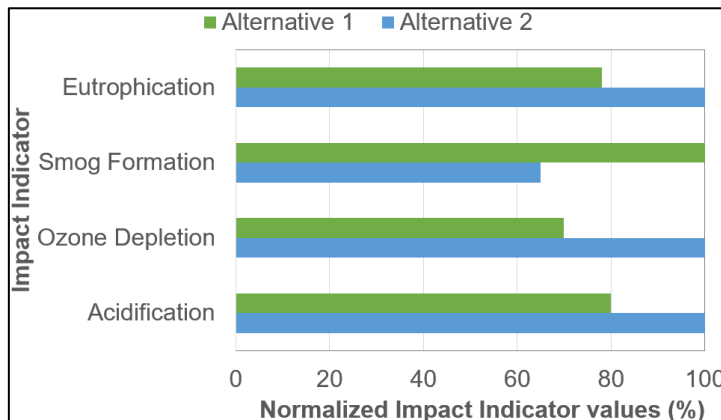




LCA Benchmarking Tool



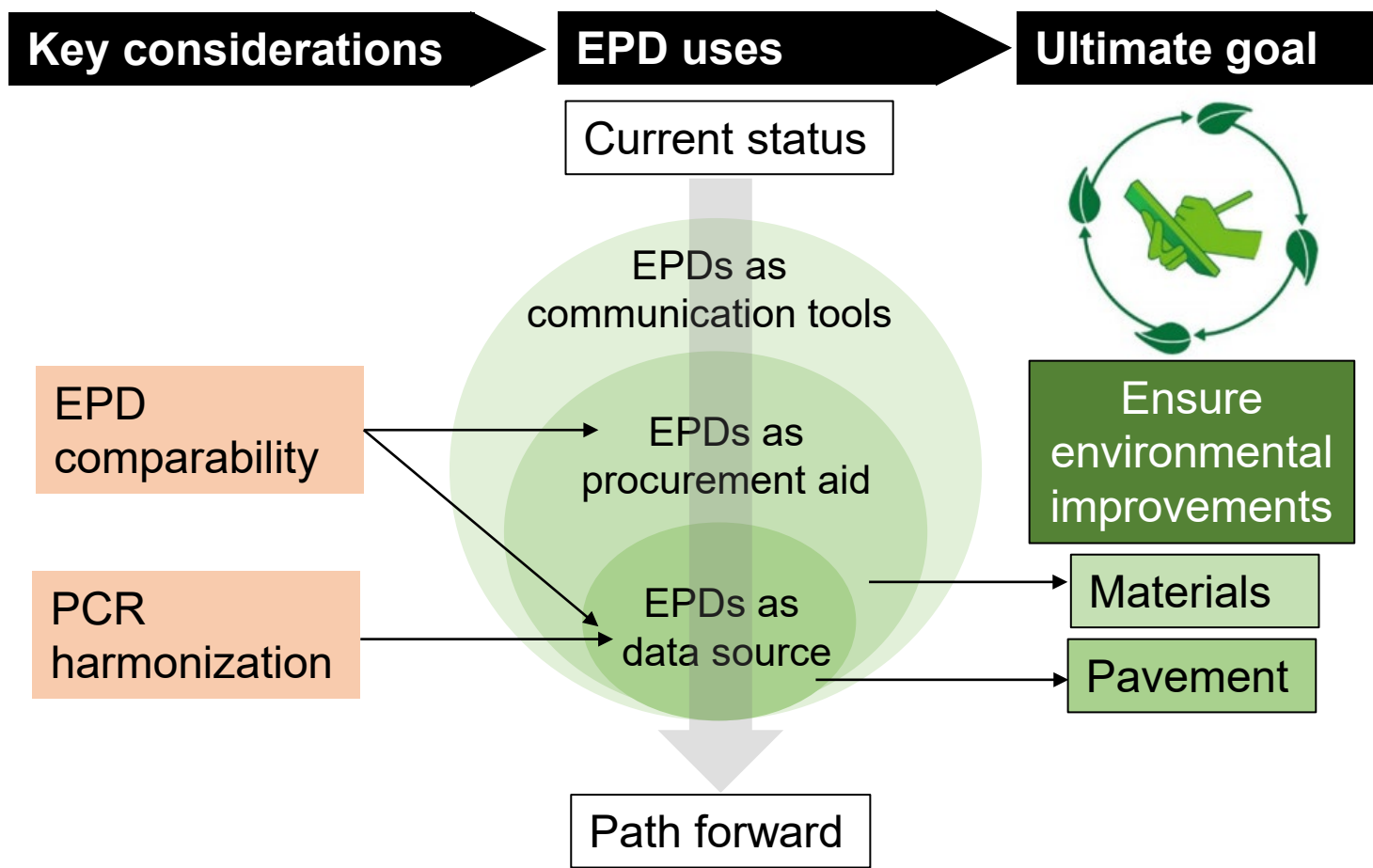
- Created with stakeholder input
- Use the identified background datasets
- Incorporate material EPDs



Available at: <https://www.fhwa.dot.gov/pavement/lcatool/>



EPDs: Potential Future Developments



For more information: Rangelov et al. (2020) Use of environmental product declarations (EPDs) of pavement materials in the United States of America (USA) to ensure environmental impact reductions. Journal of Cleaner Production, p.124619.



Resources

<http://www.fhwa.dot.gov/pavement/sustainability>



Education

[Pavement LCA Framework](#)

[Webinars](#)

[Tech briefs, studies](#)

[Technical articles](#)



Research

[LCA fit in transportation decision-making](#)

[EPDs in Green Public Procurement](#)

[LCA of recycled plastics in pavements](#)

[LCA of ground tire rubber in pavements](#)



Deployment

[LCAPave Tools](#)

[Pilot projects with State DOTs](#)

[Mobile Pavement Technologies Centers](#)

[Informing pre-engineering with ICE Tool](#)



**Going Green?
We Can Help!**
BIG Announcement - Be There!
04.22.22

U.S. Department
of Transportation
Federal Highway
Administration

**SUSTAINABLE
PAVEMENTS
PROGRAM**

#SustainablePavements

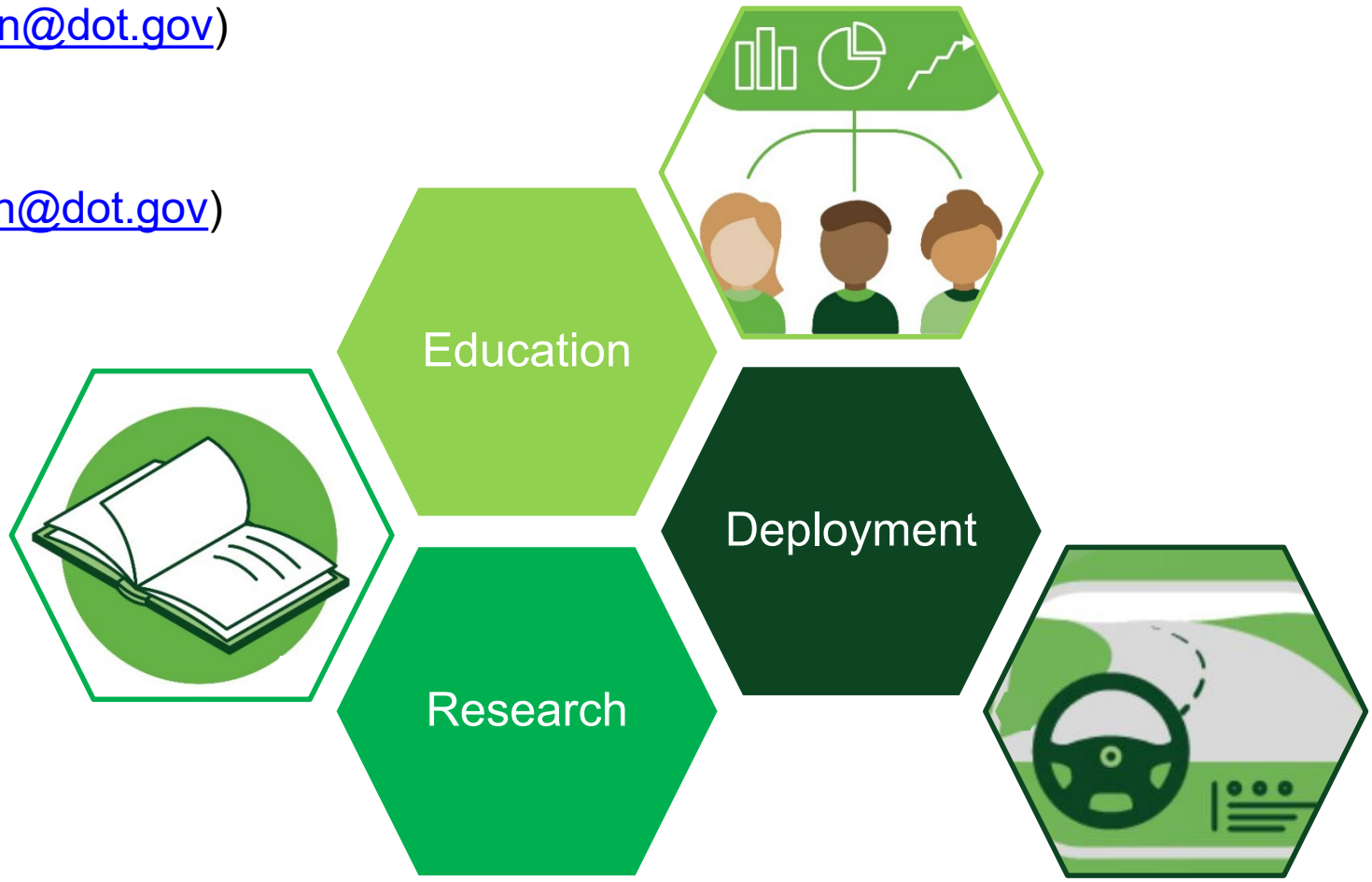
Topic: FHWA SPTWG
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<http://www.fhwa.dot.gov/pavement/sustainability>