



Wisconsin Green Highway Construction Rating System (WGHCRS)

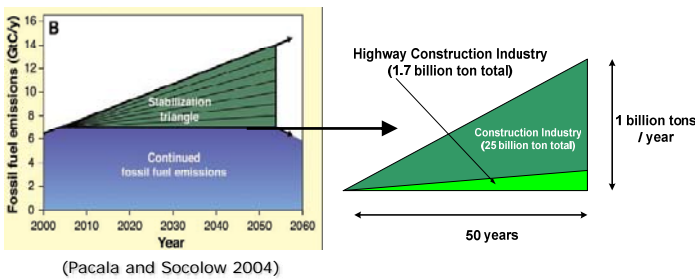
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Problem Statement

- **Shifting demographics and population growth:**
Strain the overburdened infrastructure (ASCE 2006)
- **Global warming profoundly impacting our planet:**
Constructing and maintaining highway for 50yrs produce 3,500 tons of CO₂/ 1 lane - mile (Sightline 2007)
- **Sustainability is a practical goal:**
Accomplished by Triple Bottom Line (Elkington 1997)

Research Background



- Highway Construction can contribute to one wedge through **3Rs (Reduce, Reuse, Recycle)**
- Satisfy growing demands without compromising financial, environmental, social aspects

Research Objective

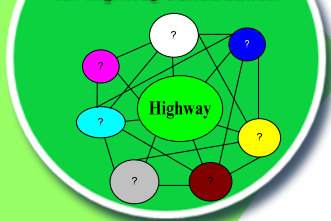
Building a green decision making support tool for planners and designers.

Systemic approaches

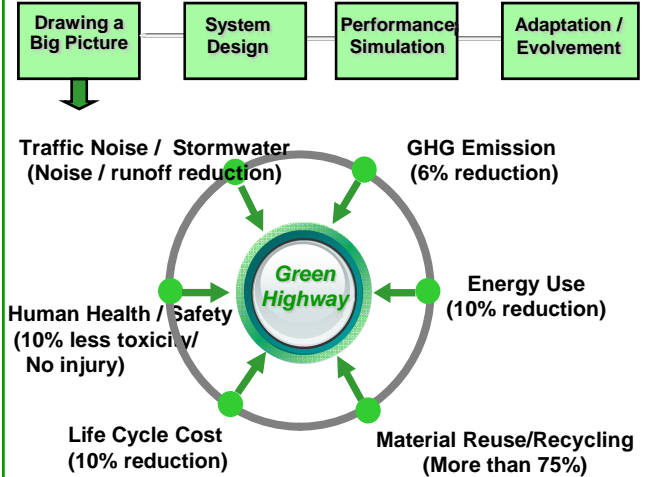
- Decision of criteria
- Weighing each criterion
- Evaluation of trade-offs

Validating actual functionality of the system

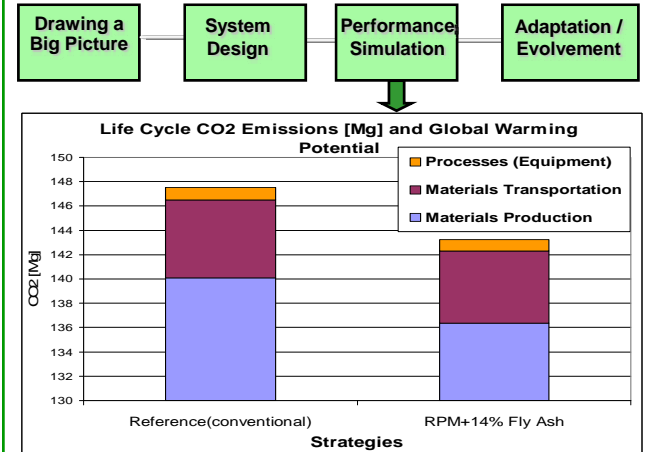
Developing a sustainability rating system for highway construction



Methodologies



Methodologies (cont'd)



Next Step: System Validation

Application of the designed rating system to pilot projects

