Alternative Uses of Right of Way
Solar Highways

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Alternative Uses of R/W

- Airspace Leases ($24M Annually)
- Cell Towers ($6M Annually)
- Investigating Alternative Energy
  - Current focus is Solar Highway research
  - Pilot Projects
State of California
Alternative Energy Efforts

• 33% Renewable by 2020
• All State Agencies asked to identify Renewable Energy Opportunities
  – Caltrans Participating in 2 ways
    • CREB (Clean Renewable Energy Bond) Program
    • Solar Highways Research
Solar Highways Research

• Looked very promising - $$$$ Bonanza!
  – Need financial advice

• New concept in highway use
  – Need solar industry expertise
Solar Highways – DOT Concerns

• Safety
  – Clear Recovery Zone
  – Glint and Glare
  – Access
  – Preference for grade separated sites

• Compatible with highway use? 20 yr. plan?
Solar Highways – Developer Concerns

• Financial Viability
  – Cost of Panels
  – Sale Price of Power
  – Power Purchase Agreements (PPA)
  – Incentives

• Long-Term Stable Landlord
Solar Highways Agreements

**DOT**
- Safety
- Fair market return on use of public right of way
- Timely use of land for highway use if needed (Vacate Clause)

**Solar Developer**
- Safety
- Profit
- Need for long term stable lease
Solar Highways - Technical

• Longitudinal Installations Not Viable
  – DC short transmission distance
  – Additional AC Inverters
  – N-S Highways costlier install

• Interconnection
  – Fees plus $1,000,000/mile; keep within 1 mile
  – Grid not always able to take more power
Solar Highways - Financial

• Obtained Financial Model from Consultant
• Initial results not favorable
• Results depend upon
  – Cost of Development
  – Sale Price of Power
• These factors change
Ongoing Efforts

• Potential for worthwhile projects
• Trial sites out in Request for Information (RFI)
  – Small number of most promising sites
  – Obtain market feedback
• Each site should be evaluated separately
Conclusion

• Income generating alternative uses for right of way exist
• Alternative energy is an important and exciting new use
• Study economics carefully
• Apply technical and safety criteria
• DOTs and Developers – Perspectives
• Don’t Give Up! – Changing Situation
Questions