

# South Access to the Golden Gate Bridge Doyle Drive

## Proposed Sustainability Program November 9, 2006



## Presentation Overview

- What do we mean by “sustainability”?
- Policy and project examples
- Proposed program for Doyle Drive

# 1987 – Definition of Sustainable Development

*“Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.”*

*Our Common Future, Brundtland Commission, 1987*



3

## “Sustainable Highways”

### **Consider that:**

- Most highway projects improve existing roads
- Most existing roads were not built to today’s demanding environmental standards
- Current highway projects are subject to more stringent environmental and equity requirements than ever

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4

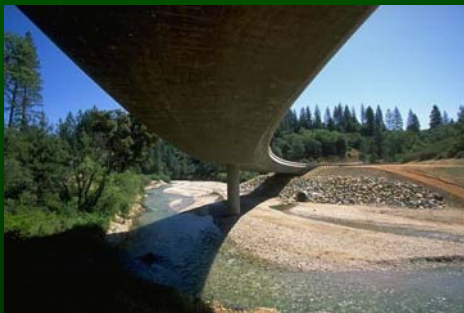
# “Sustainable Highways”

- These requirements present an opportunity for highway projects to *improve* natural, built, and social environments
- Achieving *improvements* in the natural, built and social environments, while meeting functional requirements, is the essence of *sustainable highways*

5

# “Sustainable Highways”

*Meeting Functional Requirements*  
+ *Environmental Stewardship*  
= ***Sustainable Highways***



6

# Functional Requirements

- Safety
- Access
- Capacity
- Durability
- Reliability
- Travel Time
- Cost Beneficial
- Integrated Solution
- Asset Management
- Life-Cycle Engineering
- Operations & Maintenance



7

# Environmental Stewardship

- + Public involvement
- + Resource conservation
- + Environmental protection
- + Community & Societal Issues
- + Supportive of Alternate Modes
- + Supportive of Land Use Policies
- + Context sensitive design/solutions
- + Enhancements (*Better than before*)



8

# “Sustainable Highways”

*Meeting Functional Requirements + Environmental Stewardship  
= Sustainable Highways*

***Meeting Functional Requirements - Means more durable construction, less frequent repair and reconstruction, fewer materials consumed, lower life cycle costs***

***Environmental Stewardship – Means exceeding expectations, net benefits to the natural, built and human environments, less disruption, greater community support***

9

## Environmental Stewardship According to AASHTO

### Goals

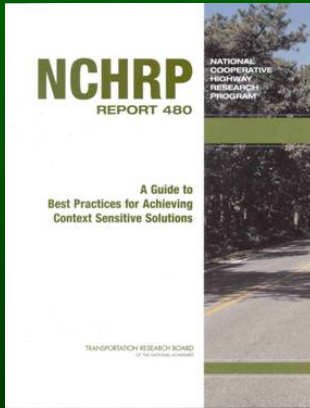
- Improve environmental conditions - not just comply with regulations
- Serve as environmental trustees for succeeding generations
- Integrate environmental values in all transportation work

Source: <http://www.itre.ncsu.edu/AASHTO/stewardship/index2.asp>

10

# Context Sensitive Solutions: A Guide to Best Practices

## 2002: New National Guide

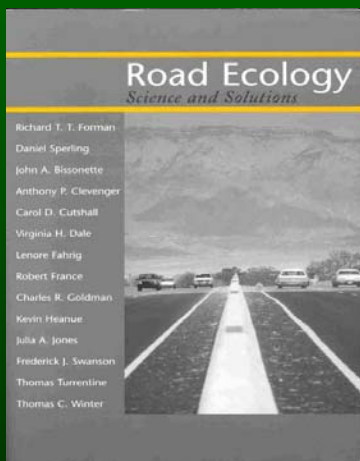


- NCHRP 480: “A Guide to Best Practices for Achieving Context Sensitive Solutions”
- *“Context sensitive design asks first about need & purpose...then equally addresses safety, mobility...aesthetic, historic, environmental & other community values.”*

11

# Road Ecology

## 2003: New Technical Reference



- FHWA, Caltrans & The Nature Conservancy
- Relationship between roads and the natural environment

12

# State Policies

## **NYSDOT**

- “Better than before”



## **Florida DOT**

- Transportation design for livable communities



## **Oregon DOT**

- Integration of Sustainability with Context Sensitive Solutions



13

# Caltrans

## **Context Sensitive Solutions Policy, 2001**



*“... use approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals.”*

14

# Caltrans

## Transportation Plan 2025 Vision, 2006



*“California has a safe, sustainable, world-class transportation system that provides for the mobility and accessibility of people, goods, services, and information through an integrated, multimodal network that is developed through collaboration and achieves a Prosperous Economy, a Quality Environment, and Social Equity.”*

15

## Rural Project Examples

### SR 260, Arizona

- Widen 17 miles of 2-lane highway to 4-lane - Tonto National Forest
- Underpasses and enlarged bridges reconnect wildlife habitat



### Paris Pike, Kentucky

- Old farm to market road through bluegrass horse country
- Preserved historic stone fences & trees; used grass shoulders



16

# Urban Project Example

## Fort Washington Way, Cincinnati, OH

- Improved operations and safety
- Reduced the overall footprint of the highway
- Improved access to river and arenas
- Provides deck for future development
- Created new transit center



17

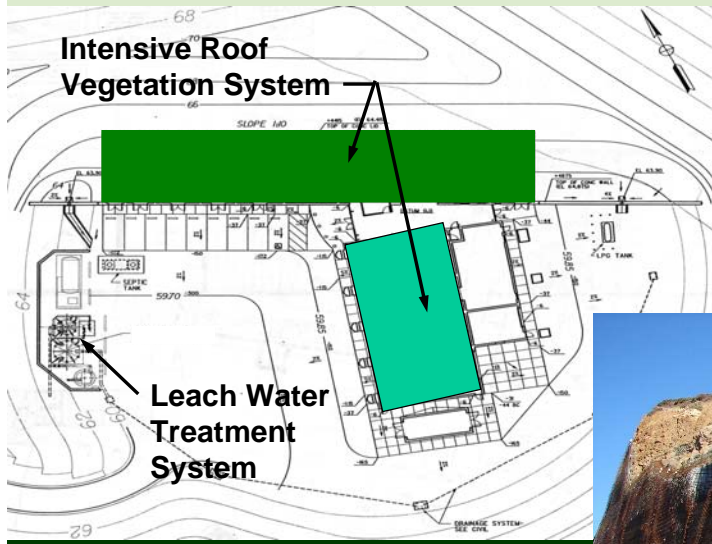
# Urban Project Example

## Better than Before



18

# Devils Slide



Rock Cut  
Sculpted Wall

Intensive Vegetated  
Roof System



# Mandela Parkway

- Created landscaped parkway in old Cypress freeway footprint
- Bike lanes
- Meandering path in median
- Oak tree collection
- 2006 award winner for environmental justice



# Octavia Boulevard



- Collaborative effort between agencies and community

- Context sensitive design



21

# Golden Gate Bridge Rest Area

- Used locally native plants
- Re-used shells of existing buildings
- Green building elements



22

# Doyle Drive: What Have We Done So Far?



23

## Preferred Alternative

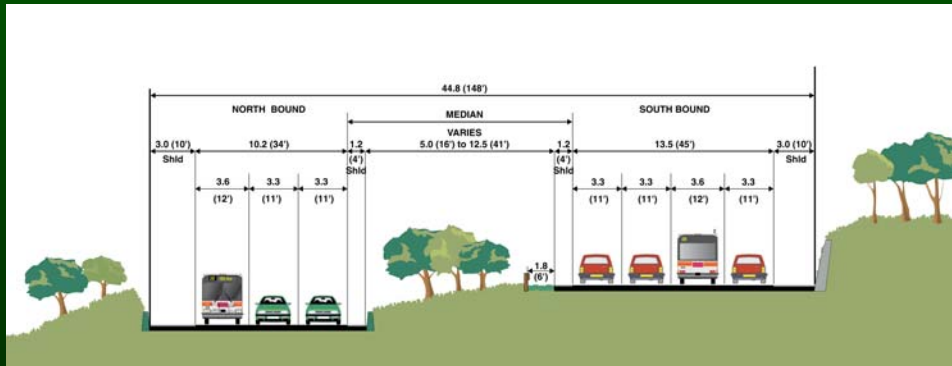
- Identified preferred alternative based on stakeholder consensus



24

# Preferred Alternative

- Respects natural contours
- Minimizes cutting, filling, and hauling
- Improves scenic views

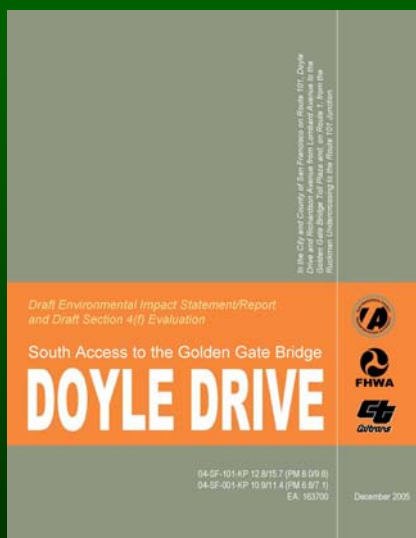


25

# DEIS/R

## Conceptual Mitigation Measures

- Stormwater runoff
- Construction pollution
- Habitat protection
- Cultural Resource Protection



26

# Doyle Drive Sustainability Program



27

## Key Program Elements

- Sustainability Goals & Objectives
- Sustainability Strategies
- Implementation Responsibility
- Monitoring Implementation
- Assessing Outcomes

28

## Purpose of the Program

Purpose of the program is to deliver a project that is sustainable in:

- Design
- Construction
- Operations & Maintenance

29

## To Achieve Success

- Develop comprehensive sustainability program for the project
- Seek input from:
  - Key stakeholders
  - Policy makers
  - Other interested parties
- Use design, engineering, and construction firms with a commitment to sustainability

30

# Developing the Program

- Use existing agency coordination and public involvement program:
  - Agency and citizen working groups
  - Key issues workshops
  - Open houses
  - Community meetings
  - Stakeholder briefings
  - Project information materials

31

# Developing the Program



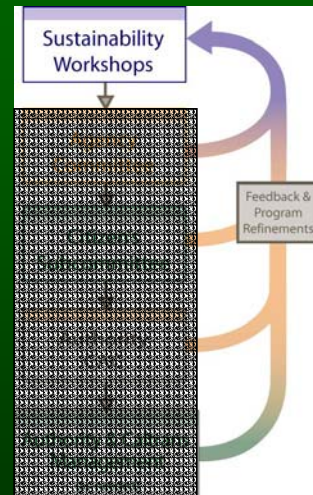
32

# Developing the Program

## Doyle Drive

### Sustainability Workshops

- Initial program development and Refinements
- Attendees could include Authority representatives, project committee members, SPUR, Dept of Environment, Sustainable San Francisco

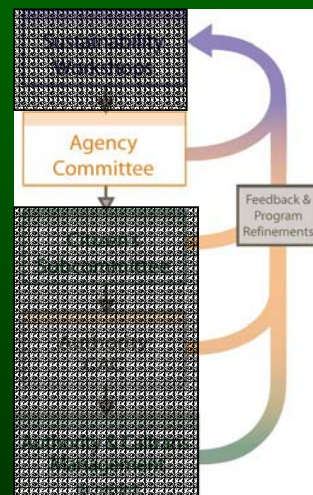


33

# Developing the Program

## Doyle Drive Agency Committee

- Input, revisions and approval

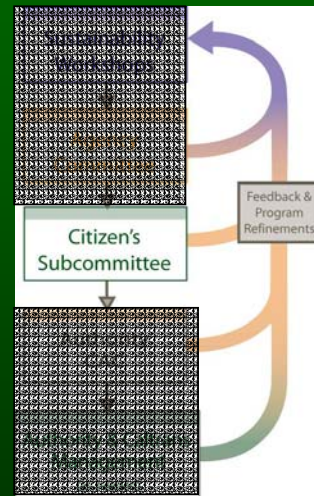


34

# Developing the Program

## Doyle Drive Citizens' Advisory Subcommittee

- Input and recommendations

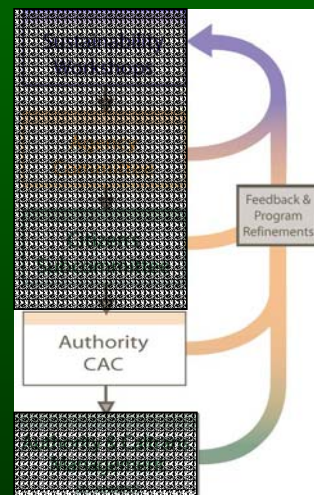


35

# Developing the Program

## Authority Citizens' Advisory Committee

- Input and recommendations

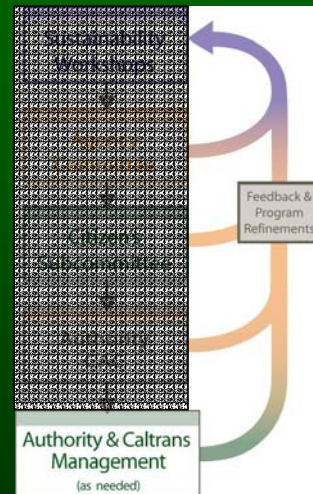


36

# Developing the Program

## Authority & Caltrans Management

- Approval, as needed



37

# Developing the Program

- Design team will provide feedback at every phase of the process



38

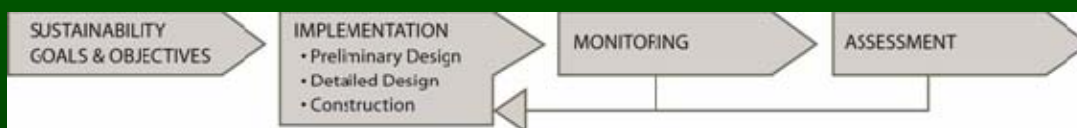
# Developing the Program

- Public will be kept informed and involved through:
  - Project website
  - Communication materials
  - Other forums, as needed



39

# Key Sustainability Program Phases



40

# Sustainability Goals & Objectives

- Statement of sustainability policy: develop core goals and objectives to achieve goals.
- Examples include:
  - Conserve and protect natural resources
  - Minimize energy consumption and emissions
  - Develop design features and materials based on life cycle costs
  - Enhance the natural, built and human environments for this and future generations

SUSTAINABILITY  
GOALS & OBJECTIVES

41

# Sustainability Implementation Strategies

- List potential strategies
  - Use checklists, best practices, lessons learned from other projects
  - Example: re-use demolished materials
- Refine and prioritize list
  - Identify critical strategies, important, less important, etc

IMPLEMENTATION

- Preliminary Design
- Detailed Design
- Construction

42



# Sustainability Strategies Implementation

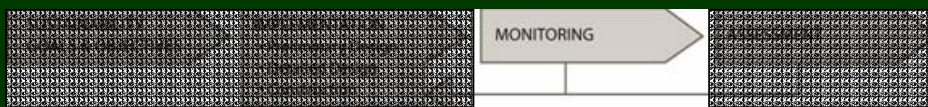
- For each strategy:
  - Establish implementation responsibility
  - Establish detailed action plan, budget, and time frame



45

# Monitoring Implementation

- Develop quality assurance plan to monitor and document implementation of each strategy
- Monitoring should be included in design, construction, and operations



46

# Examples of Monitoring

- Is design effort consistent with established and proven methodologies?
- How will dust, noise, and emissions be measured and what actions will occur if the desired values are exceeded?
- How will water and energy usage be measured and monitored and when should corrective action be taken?



47

# Assessing Outcomes

- Were expected benefits achieved?
- Did costs meet expectations?
- Some data may be more easily gathered than others
- Provides “lessons learned” for benefit of future projects



48

# Questions / Comments?

