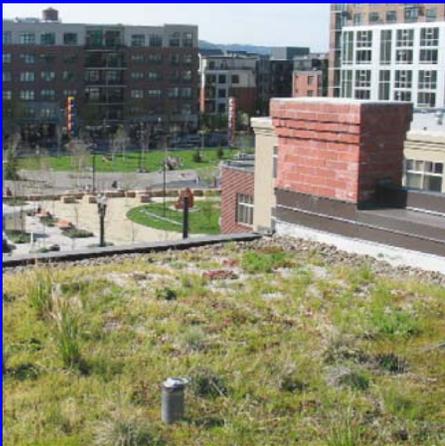


Transit Sustainability Checklist



Rail~Volution 2006

Kathy Leotta

Parsons Brinckerhoff

Why a Transit Sustainability Checklist?

- To help plan, design, construct, and operate transit facilities and services more sustainably.
- Our clients and planners/designers have been asking for a tool like this.

Recurring Themes in Checklist

- Recycle
- Re-develop
- Reduce life cycle costs
- Conserve
- Improve connectivity
- Use clean renewable energy
- Protect water resources
- Dispose of wastes properly
- Use local materials
- Use rapidly renewable materials
- Re-use
- Retrofit
- Integrate planning efforts
- Preserve historic areas and open space
- Reduce traffic congestion and fuel consumption
- Improve safety
- Improve air quality
- Promote walking/cycling
- Promote human interaction
- Measure, monitor, and report

How Checklist Can Be Used

- Brainstorming on potential sustainable elements.
- Deliberating on most critical sustainability features.
- Developing sustainability design guidelines.
- Formulating a sustainability monitoring plan and program.

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Save and Close

Select From the Following Options

- Organizational Practices
- Regional and Systems Planning
- Corridor Planning & Alternative Analysis
- Detailed Design
- Construction
- Operations and Maintenance

Instructions:

1. Identify Appropriate Project Phases to Consider (Often Current Implementation Phase and One or More Future Phases).
2. For Each Question, Obtain Input from Project Team on Importance of Issue (Assign 1, 2, or 3 Under "Importance" Column).
3. Throughout Project Implementation, Monitor Progress By Indicating Whether Issues Have Been Incorporated Into Process (Yes, No, or N/A Under "Include" Column).

Purpose and Overview of Checklist

This spreadsheet was produced by Parsons Brinckerhoff as part of PB's Corporate Sustainability Initiative. It is a tool to help PB's planners, engineers, and project managers to better incorporate sustainability into transit projects. It can also be used to help client agencies to more fully incorporate sustainability into their projects and agencies.

PB embraces both the principles of sustainable development -- a more careful balancing of social, environmental, and economic concerns -- and its fundamental goal of development that meets the needs of the present without compromising the ability of future generation to meet their own needs. This translates into PB's commitment to develop sustainable planning, design, construction, and operational practices to ensure that projects meet global infrastructure needs while respecting the use of our planet's resources.

This checklist is a compendium of possible measures associated with various phases of transit projects - from planning to design, through construction, operations, and maintenance. It is meant to facilitate analysis and decision making about the extent to which transit improvements might incorporate measures that go beyond satisfying transit related functional requirements while addressing contextual factors involving the natural, built, and human environments.

It is not a prescriptive tool, but rather it provides an "options and opportunities" framework that asks specific questions about what are the sustainable transit possibilities and how important they are to include in a project.

Although the checklist is organized around discrete and separable project phases, as a practical matter some activities must occur in earlier phases in order to trigger appropriate actions in the phase in which they are depicted. Therefore, project managers should consider future project phases early in the project development process to promote a more sustainable project and avoid unanticipated downstream disruption and delays.

Please send any suggestions or comments to Cathy Strombom at Strombom@pbworld.com

Parsons Brinckerhoff Policy Statement on Sustainable Development

PB is strongly committed to ensuring an environment suitable for a meaningful quality of life for future generations. Consequently, we embrace both the principles of sustainable development—a more careful balancing of social, environmental, and economic concerns—and its fundamental goal of development that meets the needs of the present without compromising the ability of future generations to meet their own needs. We will endeavor to promote these objectives through strategic initiatives integrating the principles of sustainable development into the processes and outcomes of our professional work.

Main Menu Page

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Save and Close

Select From the Following Options

- Organizational Practices
- Regional and Systems Planning
- Corridor Planning & Alternative Analysis
- Detailed Design
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- Operations and Maintenance

1. Guideway/Track
2. Stations, Stops, Terminals, Intermodal Facilities
3. Yards, Shop, Administration/Support Facilities
4. Sitework and Environmental Mitigation at Site
5. Systems
6. ROW, Land, Relocation of Businesses/Residents
7. Vehicles
8. Other

Instructions:

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Sample Section

Detailed Design

Transit Facility/Services Sustainability Checklist

NOTE: For construction specifications, see "Construction" sheet.

Checklist Question	Importance (1, 2, 3)	Include (Yes, No, N/A)	Comment/Action	Example/Agency
Return to Menu	1 = Essential 2 = Should Do 3 = May Want to Consider			
Save and Close				
1. GUIDEWAY/TRACK				
1 Does alignment minimize energy consumption?	2			Example: NYCT
2 Are local materials used to limit material transportation costs and support local economy?	2			
3 Has the use of recycled materials been incorporated into the specs for construction?	2			
4 Have more energy efficient materials been used when choices are available?	2			
5 Can permanent, rather than temporary, slurry walls be used as structural supports in cut and cover areas (to save cost and material of providing excessive structural capacity)?	3			
6 Can fiber optic lighting be used to provide low levels of light in tunnels using a minimum of fixtures (to reduce energy consumption as well as simplify the operation and maintenance of the lamps)?	3			

2. STATIONS, STOPS, TERMINALS, INTERMODAL FACILITIES

1 Has heat loss been minimized through the use of good doors, designing the building to be airtight, etc.?	1			
2 Has design chosen HVAC equipment that includes no CFC-based refrigerants?	1			
3 Does design include carbon monitors within bus tunnels/stations to maintain occupant health?	1			
4 Do alternatives protect or restore open spaces?	1			
5 Have buildings and systems been designed to maximize energy performance?	1			
6 Have buildings/facilities been designed with equipment to measure energy and water performance? Has a measurement and verification plan been drafted to use during building operation that compares predicted savings to those actually achieved?	1			

Project Phases Included

- Organizational Practices
- Regional and Systems Planning
- Corridor Planning and Alternatives Analysis
- Detailed Design
- Construction
- Operations and Maintenance

Organizational Practices

1. Sustainability within an office or transit agency
2. Overall sustainability for transit projects



Regional and Systems Planning

Includes 28 questions on:

1. Visioning and development of goals
2. Developing objectives and measures of effectiveness (MOEs)
3. Identifying the problems
4. Developing alternatives
5. Analysis and evaluation
6. Plan approval
7. Developing program of improvements
8. Monitoring the transportation system



Corridor Planning and Alternatives Analysis

Includes 42 questions on:

1. Development of Problem Statement, Goals, and Objectives
2. Development of Evaluation Criteria
 - Location/ Siting
 - Facility Design
3. Definition and Evaluation of Alternatives
4. Selection of Locally Preferred Alternative



Detailed Design

Includes 75 questions on:

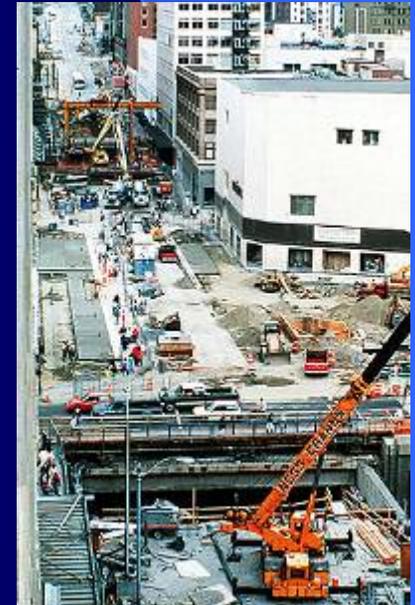
1. Guideway /Track
2. Stations, Stops, Terminals, Intermodal Facilities
3. Yards, Shop, Administration/Support Facilities
4. Sitework and Environmental Mitigation
5. Systems (e.g., signal control, power supply and distribution, communications, etc.)
6. Right-of-Way, Land, Relocation of businesses/residents
7. Vehicles



Construction

Includes 42 questions on:

1. Construction Specifications
 - General Specifications
 - Performance Based Specifications
 - Prescriptive Specifications
2. Environmental Compliance
3. Change Management
4. Incentives and penalties
5. Inspection and QA/QC



Operations and Maintenance

Includes 38 questions on:

1. Operating Costs
2. Operating Strategies/Service Improvements
3. Bus Maintenance
4. Rail Maintenance
5. Facilities Maintenance
6. Materials Management
7. Parking Management



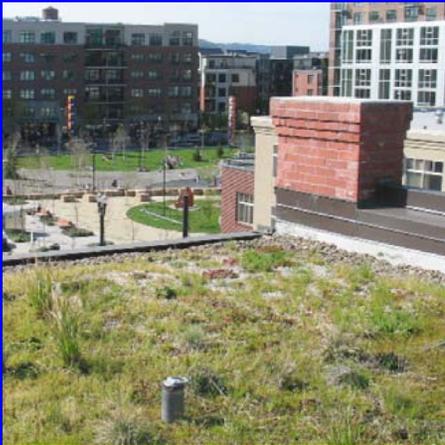
Use of Checklist

- Denver
 - Incorporated into RTD's sustainability policy and guidelines
 - FasTrack's Sustainability Committee discussing application of checklist for project
- An Evolving Tool

For a Copy of the Transit Sustainability Checklist...

- Give me your business card, or
- Email:
 - Cathy Strombom at Strombom@pbworld.com
 - Kathy Leotta at Leotta@pbworld.com

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