Opportunities to improve downtown Boise’s vital corridor

By use of identity elements, wayfinding, public artwork, green energy, green space, pedestrian safety improvements, traffic calming, streetscape design, bicycle access and public space.

Spring 2011
# Table of Contents

- **Introduction** page 4
- **Site Context** page 5
- **8th Street Concept Plan** page 6
- **Key Projects** pages 8-20
  - Cultural District Plazas
  - Front and Myrtle Street
  - Grove Pocket Park
  - Whole Park and Living Wall
  - Pedestrian Safety and Capital City Public Market
  - Post Office Plaza
- **Elements** pages 21-41
  - Green Infrastructure Elements
  - Public Art Elements
  - Mobility Elements
- **Opinion of Probable Cost** pages 42-45
- **References** pages 46-49
8TH STREET CONCEPT PLAN

INTRODUCTION

CCDC’s objective in the development of the 8th Street Concept Plan is to determine locations for potential projects and enhancements along the 8th Street axis. 8th Street is the north/south spine of downtown. The scope includes 8th Street from the Boise River to State Street with consideration to Fulton Street from 9th Street to Capitol Boulevard.

The 8th Street Concept Plan is schematic in nature and designed to be used as an idea and planning tool for future investment in the infrastructure of 8th Street. CCDC and other development individuals and groups may use this plan to strategize future funding of areas and/or projects.

This plan should be used in conjunction with previous plans including: Central District Master Plan, Boise R/UDAT, Old Boise – Eastside Master Plan, River Street – Myrtle Street Master Plan, Westside District – Framework Master Plan, Pioneer Corridor Plan, 8th Street Concept Plan, Downtown Mobility Study, Communities in Motion, Blueprint Boise, CCDC Sustainable Development Policy, Downtown Arts & Culture Plan and ACHD Roadways to Bikeways.

POTENTIAL PARTNERSHIPS

- Capital City Development Corporation (CCDC)
- Ada County Highway District (ACHD)
- Idaho Transportation Department (ITD)
- City of Boise
  - Planning & Development
  - Public Works
  - Parks & Recreation
  - Department of Arts & History
- Idaho Department of Water Resources
- West Downtown Neighborhood Association
- Downtown Neighborhood Association
- Idaho Commission on the Arts
- Preservation Idaho
- Idaho Humanities Council
- Idaho Smart Growth
- Local Universities
- Local & State Agencies & Organizations
- Idaho Botanical Gardens
- National Agencies & Organizations
- National Endowment for Arts
- Complete Streets
- Environmental Protection Agency
- EPA’s Greening America’s Capitals Program
8th Street Concept Plan

Site Context

Geographic Location

8th Street from River to Bannock streets is the north/south axis through the core of downtown Boise. This section of 8th Street runs through five established districts:

- **The Cultural District** - The Boise River to Myrtle Street
- **8th Street Marketplace** (BoDo) - Myrtle Street to Front Street
- **The Grove Plaza** - Front Street to Main Street
- **Central Downtown** - Main Street to Bannock Street
- **The Capitol District** - Bannock Street through State Street
The 8th Street Concept Plan is a basemap depicting opportunities along the 8th Street corridor from State Street to the Boise River. These opportunities include: identity elements, wayfinding, public artwork, green energy, green space, pedestrian safety improvements, traffic calming, streetscape design, bicycle access and public space. Sketches depict suggested ideas to expand these opportunities to improve this vital corridor in the heart of downtown Boise.

The 8th Street corridor passes through and joins four distinct districts in downtown Boise. The center of each district is defined by a “node” created by the intersection of pedestrian and/or vehicular traffic. The nodes act as a nexus, points of energy from which the urban landscape emanates. In combination, the nodes and the districts that grow outward from them act as organizing elements for the creation of public, urban space. A pattern then emerges. When a unifying concept is overlaid on this pattern it can help create a sense of place and strengthens the downtown core.
The Four District Nodes which act as the points of energy from which the urban landscape emanates:

- **THE GROVE PLAZA NODE**
- **MARKET DISTRICT NODE**
- **THE CULTURAL DISTRICT**
- **THE MARKET DISTRICT**

See Appendix for Opinion of Probable Cost Analysis
KEY PROJECTS:
Cultural District Plazas  
Front and Myrtle Streets  
Grove Pocket Park  
Whole Park and Living Wall  
Pedestrian Safety and the Market  
Post Office Plaza
Greenbelt Access from this area. The narrow sidewalks limit the opportunity for patio dining.

**CULTURAL DISTRICT EXISTING CONDITIONS & POTENTIAL OPTIONS**

In the Cultural District, a plaza available for outdoor events. A 26 foot wide plaza can be used for public gatherings and events. This area could be designed to accommodate various uses, such as street festivals, markets, or performances.

**Human Rights Memorial**

Artists propose a monument that honors the human rights movement in Boise. This could include a sculpture, mural, or interactive installation that tells the story of the movement and its impact on the city.

**River Street Parking Garage**

Consider introducing a green roof to the parking garage to enhance the urban landscape. This would not only provide aesthetic value but also offer energy savings through the use of green technologies.

**Green Roof**

Incorporating green roofs would be beneficial both aesthetically and environmentally. They can help mitigate the urban heat island effect and improve air quality.

**Parking Garage**

Parking facilities should be designed to accommodate increased demand, especially during peak hours. This could involve expanding existing facilities or developing new ones to meet the needs of the community.

**Bike Parking**

Strategic placement of bike parking areas would encourage alternative modes of transportation. This could include bike racks installed alongside sidewalks or within designated parking spaces.

**TREES & LIVING WALLS**

Trees and living walls can enhance the aesthetic appeal of the district and provide environmental benefits, such as air purification and cooling.

**8th Street Concept Plan**

The 8th Street Concept Plan is a basemap depicting potential projects along the 8th Street Corridor from State Street to Boise River. Opportunities include identity elements, public art, green space, pedestrian safety, and bicycle parking. This plan highlights key projects and sets the stage for future development.

**KEY PROJECTS**

- **INTERSECTIONS & ART**
  - Reduced vehicular travel lane widths to slow traffic
  - Defining crosswalks and intersections through changes in texture and surface materials
  - Curbs and strategically located bulb-outs to reduce travel distance

- **PEDESTRIAN SAFETY AT INTERSECTIONS & ART**
  - Alternative green energy sources along 8th Street to provide wayfinding information for pedestrians
  - Autonomous kiosks could provide real-time information about the art installations
  - Pedestrian safety at intersections could be enhanced through the use of green energy themes

- **GREEN ROOFS AT PUBLIC PARKING MARKETPLACE NODE**
  - Green roofs could be integrated into the design of public parking structures
  - The roofs would not only improve sustainability but also provide additional green space in the urban environment

**PUBLIC ART**

Art installations can serve as unique wayfinding tools. They can also act as a medium to integrate the community into the design process. The public art along 8th Street could include various elements, such as sculptures, murals, or interactive installations.

**GREENING THE GROVE**

The existing grove could be expanded to include additional green areas. This could involve the creation of public, urban space. A pattern then emerges. When a series of public spaces are related to one another, a sense of place and place identity begins to form.

**BIOSWALE**

Bioswales can be strategically located to manage stormwater runoff. This would help reduce flooding and improve water quality in the urban environment.

**LONG-TERM POTENTIAL**

The grove and adjacent areas offer long-term potential for transformation. Strategies include the integration of alternative transportation modes, green space expansion, and community engagement.

**INTERACTIVE GREEN ART**

Artists propose interactive green art, such as wind turbines. These would not only provide aesthetic value but also serve as a sustainable energy source. The art could be integrated with digital kiosks to provide up-to-date information about the art installations.

**MARKETPLACE NODE**

The Grove Plaza and Central Downtown & Capitol Districts could be connected through a living wall application. The wall could be relocated to different areas as needed, adapting to the changing needs of the community.

**PEDESTRIAN SAFETY**

The intersections along the 8th Street corridor have different conditions. Plans A and B can accommodate these variations by adjusting lane widths, adding bike lanes, and enhancing pedestrian safety.

**8TH STREET CONCEPT PLAN**

The 8th Street Concept Plan is a basemap depicting potential opportunities along the 8th Street Corridor from State Street to Boise River. Opportunities include identity elements, public art, green space, pedestrian safety, and bicycle parking. This plan sets the stage for future development within the Cultural District.
CULTURAL DISTRICT PLAZAS

The three blocks of 8th Street between Broad Street and River Street are an opportunity to energize the Cultural District. The concept is to develop those three blocks into a center for the Cultural District with a large plaza for outdoor events.

A 26 foot wide plaza can be accommodated by limiting the traffic to a single one-way lane with parallel parking on one side and two bicycle lanes. The bicycle lanes have one lane traveling with traffic and a contra-lane that travels against traffic. Sidewalks are designed to allow for compact patio dining, and the larger plaza can host even more patio dining. Bioswales and double rows of trees introduce vegetation to the streetscape. The plazas may also include water features, unique paving designs, artist designed street furniture and public art installations.
Narrowing the current two-way street to a one-way street in the Cultural District enables a large 26 foot wide public plaza to be created from the newly gained space. This public plaza could house street vendors, provide patio dining, and host cultural events. The proposed one-way travel direction would connect with BoDo’s current one-way travel direction.
Current conditions at the three blocks of 8th Street between Broad Street and River Street exhibit narrow sidewalks, parallel parking and two-lanes of traffic. One block has a median in-between the travel lanes. Bicycle lanes are missing from this area. The narrow sidewalks limit the opportunity for patio dining. The road dominates the streetscape.

Potential options to remedy these issues include a streetscape scene similar to other downtown blocks that include narrower two-lanes of traffic without a median (see Potential Condition #1, page 13) or limiting traffic to a single lane one-way of traffic (see Potential Condition #2, page 13.) By reducing the street traffic width, this gained space is an opportunity to create public plaza space. Potential Condition #2 with one-way traffic would create the largest, more successful public plaza.

A public plaza would become a place for the general public to enjoy cultural events, for street vendors to set up carts, and patio diners to enjoy the comfortable Idaho weather. This could make the Cultural District a lively and vibrant destination.
Potential Condition #1 - Two-way Traffic with small patios

Potential Condition #2 - One-way with large public plaza
EXISTING CONDITIONS AT FRONT AND MYRTLE STREETS

Front Street and Myrtle Street currently serve as principal arterial streets to funnel vehicular traffic in and out of downtown. The five lanes of traffic on these streets create barriers to the flow of pedestrian traffic on 8th Street due to the volume and speed of vehicles and the width of the street.

In 1992, the Broadway-Chinden Connector was completed. Front and Myrtle streets were each expanded to five lanes of one-way traffic in each direction. This reduced the traffic load on Idaho and Main streets by routing traffic outside the central business district.

Prior to this, in the late 1890s, a train station was located on Front Street between 9th and 10th Streets. The four square blocks encircled by Capitol Boulevard, 9th Street, Front Street and Myrtle Street served as the rail yards.
The five lanes of traffic that define Front Street and Myrtle Street create barriers to the flow of pedestrian traffic on 8th Street due to the volume and speed of vehicles and the width of the roads. A concept to retain the existing five traffic lanes during peak travel hours with the addition of a full-time bike lane and parking during off-peak hours could be implemented. For example, five lanes could be dedicated to vehicular traffic from 7am to 9am and 3pm to 7pm. During the time of non-peak traffic volume, parallel parking would be allowed and vehicular traffic would be reduced to four lanes from 9am to 3pm and 7pm until 7am.

The new bicycle lanes are accommodated by narrowing the current width of each traffic lane. Narrower traffic lanes have a tendency to slow vehicular traffic thus increasing pedestrian safety. Roadside parking during non-peak traffic hours improves pedestrian safety at adjacent sidewalks. This opportunity to increase pedestrian safety can be accommodated cosmetically by repainting the pavement markings and installing signage.
GROVE POCKET PARK

The existing patch of lawn presents the opportunity to create a small park referred to as a “Pocket Park.” Built-in seating defines the raised planting beds that provide an inviting atmosphere for people to rest as they meander along 8th Street.

Vegetation provides texture, color and shade. Variation in paving pattern and materials adds interest to the space. Adjacent building walls that define the space could be used for the display of public art.
WHOLE PARK AT 8th AND MAIN STREETS
The northwest corner of 8th and Main streets has a troubled history in terms of development. Currently, it is referred to as “Boise’s Hole” due to the incomplete 25-story proposed Boise Tower. With a positive twist, the 8th Street Concept Plan proposes “Whole Park” for the location. The Concept Plan envisions reclaiming part or all of the space to develop a park for the general public to enjoy. This park could be simply a landscaped place to relax and enjoy a nice day, or also provide temporary or permanent space for street vendors to set up shop. The Capital City Public Market resided at this location in 1996. The Market could potentially become part of this space again.

LIVING WALL – GREENING THE GROVE
Whether or not Whole Park becomes a reality, a living wall at this site would be a great asset to the area. Imagine a vertical garden with luscious green vegetation, colorful flowers and various textures. A living wall is simple to install and easy to relocate if needed. Living walls can be a few feet high or can scale the entire facade of most of Boise’s downtown buildings.

The vines could grow on the existing mural wall, against the blank wall of the Boise City National Bank Building (now known as the 805 Idaho Building) or against the parking garage depending on how the space is developed. See page 29, Living Walls.
PEDESTRIAN SAFETY AT INTERSECTIONS AND ART

The intersections along the 8th Street corridor have different conditions that will require individual solutions for increasing pedestrian safety, wayfinding and traffic calming. The goal is to have pedestrians safely traverse the 8th Street corridor and for vehicular traffic to intersect this corridor with minimal increase in congestion.

Through the integration of traffic calming, pedestrian control devices, and artwork, intersections have the potential to provide a safe path for pedestrians, an efficient path for vehicular traffic, and an opportunity for art installations to begin to define places and nodes.

These elements may include:
- Curbs and strategically located bulb-outs to reduce travel distance
- Defining crosswalks and intersections through change in texture and color
- Change in road surface materials to alert and slow vehicular traffic
- Strategically located art installations
- Reduce vehicular travel lane widths to slow traffic
- Installation of pedestrian signals that countdown and/or incorporate an audio element

Plan A includes minimal changes to the street and sidewalk conditions.

Plan B includes bulb-outs or widening of sidewalks and raised curbs to help physically define pedestrian and vehicular space.
Pedestrian safety is a primary concern at the intersection of 8th and Main streets during the Capital City Public Market days. Currently pedestrians casually cross Main Street with minimal attention being given to oncoming Main Street traffic.

A physical barrier, such as a gate, would increase pedestrian safety at this intersection. On market days, the gate would close to create a partial barrier between 8th and Main Streets. This would force pedestrians to funnel around the gate to the crosswalks. The gate would remain in an open position during non-market days.

This gate could have a dual purpose – it could be commissioned as public art and operate with an alternative energy source. This gate could “announce” the Capital City Public Market and add to the character of the immediate area.

Installation of similar elements at the other market entry intersections could also be introduced to increase pedestrian safety and advertise the market on non-market days.
**POST OFFICE PLAZA**

The sidewalk frontage at the downtown Post Office provides an opportunity for a public plaza space. Transforming a sidewalk into a public gathering space, through the use of seating and landscaping elements, encourages people to use it as a place to meet and relax.

Water elements help to cool the space on hot summer days and may be designed as a place for children to play. Vegetation provides texture, color and shade. Variation in paving pattern and materials adds interest to the space. An art installation may act as a focal point of the plaza.
ELEMENTS: Smaller components that make up the streetscape.

**Green Infrastructure Elements** (pages 22-29)
- Bioswales
- Permeable Pavement
- Street Trees
- Alternative Fuel Vehicle Charge Stations and Parking
- Green Roofs
- Living Walls

**Public Art Elements** (pages 30-34)
- Major Art Installations
- Events and Culture
- Murals
- Paving Patterns at Crosswalks and Intersections
- Water Features

**Mobility Elements** (pages 35-41)
- Automobile Parking
- Bicycle Lanes
- Bicycle Parking
- Curb Bulb-Outs
- High Visibility Crosswalks
- Gateways
- Wayfinding
- Street Furnishings
**Objective:**
Green Infrastructure
Bring green landscaping to hard surfaced 8th Street
Soften streetscape
Reduce stormwater runoff

**Benefits:**
Reduces stormwater runoff
Reduces demand and maintenance on stormwater drainage
Naturally filters water before it reaches the water table or Boise River
Introduces vegetation to the urban landscape
Cooling effect on a typically harsh urban environment
Safety barrier from traffic for the pedestrian

**Application:**
Reconfigure existing tree and grates to function as a bioswale
Locate at sidewalks near street edge
Locate at bulb-outs
Locate at plazas

**Potential Partners:**
CCDC
ACHD
ITD
City of Boise Public Works
City of Boise Parks & Recreation
DBA
Property Owners

**Maintenance:**
Sediment removal
Weeding
Leaf removal
Occasional supplemental irrigation during hot spells

**Opinion of Probable Cost:**
Planter Bioswale $125/sf
Street Bioswale $36/sf
Curb-Extension Bioswale $36/sf

18’x4’ Planter Bioswale = $9,000
40’x7’ Curb-Extension Bioswale = $10,000

**BIOSWALES**
A bioswale is a vegetated facility that manages street runoff produced by precipitation. The vegetation and soils of the bioswale remove pollutants from the surface water runoff before entering the drainage system, groundwater or river. Bioswales may allow water to naturally filter to the ground water table or filter through the plants and top soils to a drain pipe connected to the river. A combination of infiltration and flow-through planters will most likely be required to accommodate different applications. Vegetation within the bioswale is selected based on low maintenance and local climate. Vegetation for Boise bioswales would include drought tolerant plants appropriate to our semi-arid climate.

**MAINTENANCE**
The first two years will require additional maintenance to establish the vegetation, therefore additional irrigation will be required. Also during extreme hot and dry weeks of the summer additional irrigation may be needed. Weeding, sediment, leaf and debris removal may occur at a quarterly basis. Much of the maintenance is similar to typical landscaped bed maintenance. Some cities have found that the maintenance required by bioswales is balanced by the reduction in stormwater drain maintenance and improvements.
An urban bioswale is typically located in the public right-of-way and may be managed by one of many agencies or groups. Bioswales in an urban environment are designed to accommodate vehicles and pedestrians. An urban bioswale may be designed in multiple ways and the ultimate design should reflect the existing conditions, opportunities for improvement and the character and use of an area.

In an urban setting a bioswale will typically include a curb. Most often they will be 3-7 feet wide and have a ponding depth of 6-9 inches. The curbs have curb cuts that may be covered with metal grates to allow for pedestrian passage.

For 8th Street three major types of urban bioswales are proposed: planter bioswale, a street bioswale, and a curb-extension bioswale.

“Green Infrastructure is perhaps even more relevant in arid and semi-arid climates.” - EPA
Planter Bioswale

A planter bioswale is located between a curb and sidewalk in a narrow street planter that typically has vertical concrete sides. These planters are typically 3 to 4 feet wide. Existing street trees may be accommodated in planter bioswales. The planter bioswale may be located 3 feet from the curb to allow for step-out space from a parked vehicle. Grates cover the curb inlets to allow pedestrians to navigate around the planter. A small curb may be included on the sidewalk side of the planter to prevent pedestrians from trampling the vegetation.

Street Bioswale

A street bioswale is wider than a planter swale and has sides that slope. This may be located between a sidewalk and a street with or without a curb at the street side. This may be in the form of a median bioswale as well.

Curb-Extension Bioswale

A less expensive bioswale application that may be added to the outside of an existing curb is a curb-extension. These are relatively simple to add to an existing sidewalk. This application works great on residential streets. This extension bumps out into the existing street. The curb-extensions are typically 4 to 7 feet wide and have a ponding depth of 6 inches. This type of bioswale can serve to neck-down the street mid-block or at end-block. End-block locations help to slow traffic at intersections and increase visibility for pedestrians crossing the road.

BIOSWALE TYPES:
- Planter Bioswale
- Street Bioswale
- Curb-Extension Bioswale
- Raised Median Bioswale

NATIONWIDE SUPPORT

The “Greening America’s Capitals” project of the Partnership for Sustainable Communities coordinated through the Environmental Protection Agency (EPA), the US Department of Housing and Urban Development (HUD) and the US Department of Transportation (DOT) is helping state capitals to develop an implementation plan for green buildings and green infrastructure. Urban bioswales are gaining popularity across the country through this program. Urban bioswales are also being implemented in arid and semi-arid climates such as Tucson and Phoenix, AZ.

www.epa.gov/smartgrowth/greencapitals.htm
PERMEABLE PAVEMENT

The purpose of permeable pavement is to capture stormwater and allow it to seep into the ground, thus recharging the groundwater, reducing stormwater runoff and meeting the US Environmental Protection Agency stormwater regulations. This technology aids in the reduction or elimination of retention ponds, swales and other stormwater management devices. Some cities have allowed stormwater retention to be shared between nearby properties and on-street permeable pavement parking or nearby parking lots. Permeable pavement comes in many forms including interlocking permeable pavers, pervious concrete, and porous asphalt. Traditional pavers with permeable joints also function as permeable pavement, although they are not as effective.

Permeable pavers and pervious concrete offer a range of colors and opportunities for design. They also reduce the heat island effect by producing less heat than the most commonly used road surface, asphalt. Permeable pavers offer the timeless aesthetic with a sustainable solution, and may also include recycled content.

Permeable pavers that actually allow water to filter through the paver are currently available from a local Idaho company. This permeable paver looks and functions like pervious concrete. Freeze-thaw is not an issue, microorganisms biodegrade oils from vehicles, the surface does not get slippery when wet and it does not collect pools of water that form into ice.

IMPLEMENTATION

On-street parallel parking areas are ideal locations for permeable pavement. The parking areas transform from a heat island that transfers stormwater runoff to other areas into a stormwater filtration system that allows the water to return to the ground water table. With budget constraints in mind, permeable pavement might be installed in a rhythmic pattern along a block, at special parking areas, or at every other block. And, the parking lines could potentially be designed into the paving pattern. Bike lanes alongside the permeable pavement parking may be installed as a different color to clearly designate the lane which eliminates the need for routine re-painting. A long-term cost analysis evaluating the initial installation, maintenance, elimination of paint maintenance, expected lifespan of the material as installed and the benefits of reducing stormwater runoff and filtration should be investigated to determine the potential savings of installing a pervious pavement system in lieu of standard asphalt.
8TH STREET CONCEPT PLAN

Objective:
Green Infrastructure
Soften streetscape

Benefits:
Beautify 8th Street with lush tree canopy
Provide shade
Lower summer temperature
Increase pedestrian use
Increase pedestrian safety

Application:
Add trees to southern half of 8th Street
Trees planted at sidewalks in bioswales
Varied class trees planted at bulb-outs
Varied class trees planted in public spaces and private plazas

Potential Partners:
CCDC
ACHD
ITD
City of Boise Public Works
City of Boise Community Forestry
DBA
Property Owners

Maintenance:
Irrigation
Pruning, Limbing
Leaf removal

Opinion of Probable Cost:
$4,000/Tree Installation
includes tree well, grate and cage

ELEMENTS
BIOSWALES • TREES • LIVING WALL • GREEN ROOF

STREET TREES
Along 8th Street, between Front Street to Jefferson Street, a beautiful, well-established canopy of trees exists in the Grove Plaza, Central Downtown, and the Capitol District. The trees are planted according to CCDC’s “Urban Brick Streetscape Standard Type 1.” Further south, in the 8th Street Marketplace, between Front and Myrtle streets, the trees are more newly established, but in keeping with a similar “Urban Brick Streetscape Type 1” standard. At the far southern end from River Street to Broad Street, in the Cultural District and part of the 8th Street Marketplace, tree placement is sparse as well as other landscaping.

The concept plan focuses on increasing the number of street trees at the sparse, southern end of 8th Street. Between River Street and Broad Street, if the proposed large public plaza with one-way traffic lane concept is created, double rows of trees could be planted at the public plazas. This lush double row would provide shade for events in the public plazas. A canopy of trees over the road naturally slows vehicle traffic, increases pedestrian safety, and creates a microclimate for bioswale plants. A variation in the class and type of trees is encouraged, which adds to the character of the area. See page 10, Cultural District Plazas.

Class I Trees
20’-30’ height and crown

Class II Trees
40’-60’ height and crown

Class III Trees
60’-90’+ height and crown
Objectives:
- Encourage alternative fuel vehicle usage in Boise
- Green Infrastructure

Benefits:
- Easy access to charging stations downtown
- Encourages alternative fuel vehicle usage

Application:
- On-street parking spaces throughout downtown

Potential Partners:
- CCDC
- ACHD
- ITD
- City of Boise Public Works
- Idaho Power
- Property Owners

Maintenance:
- Similar to standard street maintenance

Opinion of Probable Cost:
- $2,500/Charge Station

Some of the electric infrastructure for charging alternative fuel vehicles is already in place. Many street lights downtown are currently equipped with electrical outlets. See photo above from 8th Street.

ALTERNATIVE FUEL VEHICLE CHARGE STATIONS & PARKING

To encourage alternative fuel vehicle use, Boise should strategically locate alternative fuel vehicle charging stations and parking designated for these vehicles. The parking should include alternative fuel vehicles, motorcycles, scooters and bicycles.

Some of the electric infrastructure for charging alternative fuel vehicles is already in place along 8th Street. Many street lights are currently equipped with electrical outlets. It may be possible to simply add signage and allow the charging of these vehicles to occur today.

The City of Boise currently allows “Zero Emission ‘Green’ Vehicles” to park for free at all parking meters downtown. 8th Street is an opportunity to further encourage zero emissions vehicle use by providing electric charging stations.
While conventional roofs typically require replacement every 10-20 years, green roofs typically require replacement every 40-50 years.

- EPA


**Elements**

**Trees** • **Green Roof** • **Living Wall**

**Green Roofs**

Downtown rooftops provide an opportunity for the introduction of a “green landscape in the sky.” Public and private buildings and parking garages pose an opportunity to introduce green landscape at the top levels of the structures.

Green roofs help to improve air quality, temperature regulation, provide areas for stormwater retention/reuse, preserve habitat and biodiversity, are an opportunity for local food production, and an opportunity for expanded community spaces. The insulating value of a green roof significantly reduces heating and cooling requirements of urban buildings.

Downtown rooftops are also an opportunity to introduce wind power to Boise. Small and silent wind turbines attached to buildings utilize aerodynamics to harvest wind distinct to the urban environment. This “free” energy could be used to reduce the demand on standard energy resources and reduce energy costs.

**Green Roof at Idaho’s Capitol**

**Rooftop Wind Power in Portland, OR**

**Objective:**

Green Infrastructure
Lush landscape

**Benefits:**

Landscape in urban environment
Reduce building heating/cooling demands
Reduce heat island effect
Improve air quality
Stormwater retention/reuse
Preserve habitat and biodiversity
Opportunity for community spaces

**Application:**

Rooftops of parking garages
Rooftops of public and private buildings

**Potential Partners:**

CCDC
City of Boise Public Works
City of Boise Parks & Recreation
Property Owners

**Maintenance:**

Minimal
Minimal weeding
Supplemental irrigation
Annual mowing

**Opinion of Probable Cost:**

TPO membrane and insulation
$8.00/sf

Vegetation System
$12.00-$15.00/sf

**Total System $20.00-$23.00/sf**
LIVING WALLS

Imagine a vertical garden with green vegetation, colorful flowers and various textures. A living wall is simple to install and easy to relocate if needed. Living walls can be a few feet high or can scale the entire facade of a building.

Living walls come in multiple forms. A collection of vines planted at the base of a wall is a simple way to soften the hard edge of a building. The vines are started in a planter and encouraged to scale the building with the use of an attached modular grid system. Selected vines offer the opportunity for a vegetated wall year round in Boise. Living walls may also be constructed with living wall modular planting boxes which hold soil and the root system of the plants. This system may pose more challenges for Boise’s climate, but offers the ability for a dynamic composition in plant type in color and texture.

LOCATION:

A living wall at the incomplete construction site at 8th and Main Street would be a great asset to the area. The vines could grow on the existing mural wall, against the blank wall of the Boise City National Bank building, or against the parking garage. On a larger scale, the 8th Street Concept Plan proposes infilling the construction site and creating a park with living walls and lush landscape. See page 17, Whole Park.
GREENING THE GROVE THROUGH INTERACTIVE GREEN ART

The concept of “Greening the Grove” has evolved from a singular public art piece into a collaboration of multiple local organizations working together to introduce green sustainable art elements to the 8th Street corridor. It is a public art concept for downtown Boise that embodies alternative energy and a “green” focus. Selected artists will design artwork that integrates alternative energy. The alternative energy element of the art might include: solar, wind, water or kinetics. Art elements designed by local artists will speak to alternative energy through design and function.

The art elements may function in an interactive method with pedestrians. The art may incorporate kinetic pavers made of local recycled glass that glow when stepped on or whirligigs spinning in the wind that power interactive art or nearby street lamps. Photovoltaics integrated in the art could collect energy from the sun to power a kiosk that provides information to pedestrians. The concept of “Greening the Grove” would extend along the spine of 8th Street by connecting nodes, which would improve wayfinding and create a sense of place.

MAJOR ART INSTALLATIONS

Many places along 8th Street are opportunities for Public Art. Primary locations include the intersection curb bulb-outs, mid-block at the sidewalks, and at public and private spaces. Public Art is created by an artist to be sited in a specific public space. The art pieces may come in many forms and aim to heighten awareness, challenge assumptions, transform the landscape, express community values and represent the City’s image. Public art pieces energize public spaces, reveal the character of a neighborhood and often help spaces thrive.
EVENTS AND CULTURE

An integral component to placemaking is the introduction and existence of public events. The Grove Plaza, Central Downtown, and the Capitol District host many popular events throughout the year, Alive After 5, First Thursday, Christmas in the City, Fall for Boise, Jazz on the Grove, and the Boise Curb Cup, to name a few.

The incredibly successful Capital City Public Market was established downtown in 1994, and has grown from 12 vendors to more than 150 vendors. At one time it was located in “Boise’s Hole,” but now occupies Grove Plaza, 8th Street from Main to Bannock, and Idaho Street from Capitol to 9th streets.

The 8th Street Marketplace, also known as BoDo, also hosts First Thursday, the Boise Curb Cup, and other events. It has become a shopping and dining destination.

The Cultural District currently lacks events. If the proposed large public plaza with one-way traffic lane concept is created, it would become a place for the general public to enjoy cultural events, for street vendors to set up carts, and patio diners to enjoy the comfortable Idaho weather. This could make the Cultural District a lively and vibrant destination.
**Objective:**
Public Art
Beautify blank building walls

**Benefits:**
Opportunity for artists
Opportunity for community groups
Placemaking
Landmark
Cultural event

**Application:**
Temporary or permanent murals at blank building walls
Temporary or permanent murals at traffic light boxes
Temporary or permanent murals at street furnishings

**Potential Partners:**
CCDC
City of Boise Department of Arts and History
Local Artists
Property Owners

**Maintenance:**
Similar to standard mural maintenance

**Opinion of Probable Cost:**
Mural $10,000-$15,000

---

**MURALS**
Blank building walls and traffic boxes offer an opportunity to install murals by local artists. These murals may change on a regular basis, or be installed permanently.

**EXISTING MURAL ART LOCATIONS:**
Temporary wall at the corner of 8th and Main Streets
Foothills School at 618 S. 8th Street
Escalator at Capital Terrace Building, 150 N. 8th St.

**TRAFFIC BOX MURAL ART LOCATIONS:**
8th and Idaho Streets
8th and Front Streets
8th and Bannock Streets

**PROPOSED MURAL ART LOCATIONS:**
South facade of Boise City National Bank Building
Boise Centre at proposed Grove Pocket Park
Blank building walls in the Cultural District
Additional Traffic Box locations
PAVING PATTERNS AT CROSSWALKS AND INTERSECTIONS

Paving patterns at crosswalks and intersections may be made of various materials and designs. The materials may include colored and/or textured concrete or a design out of permeable pavement. The intersections and crosswalks may be raised from the road surface to aid in slowing traffic and clearly define the pedestrian crossing area.

A specific design might reflect the immediate character of the area and is an opportunity for artists to “paint” a mural on the pavement. Special intersections flanking existing places might receive a more detailed treatment than other intersections along 8th Street. This application lends itself to wayfinding and placemaking.

The material options for paving patterns are nearly endless. Some examples are:

- Integral color concrete
- Pervious concrete
- Permeable pavers
- Concrete pavers
- Stamped concrete
- Painted concrete (temporary)
- Brick pavers
- Granite pavers
- Stone
- Cobblestone
- Glass pavers
- Adhered pattern to surface
- Embedded pattern to surface
- Stamped asphalt
- Thermoplastic embedded asphalt

Objective:
- Public Art
- Slows vehicular traffic
- Placemaking
- Stormwater management through permeable pavement systems

Benefits:
- Alerts and slows traffic
- Opportunity for artists
- Opportunity for community groups
- Placemaking
- Cultural event

Application:
- Crosswalks
- Intersections
- Mid-Block patterns

Potential Partners:
- CCDC
- ACHD
- ITD
- City of Boise Public Works
- City of Boise Department of Arts and History
- Local Artists

Maintenance:
- Street sweeping/vacuuming

Opinion of Probable Cost:
- Concrete $6.00/sf
- Integral color concrete add $1.00/sf
- Permeable Pavers $7.00-$8.00
- Pervious Concrete $6.00/sf
- Pavers with Permeable Joints $12.00/sf
- Brick $12.00/sf
WATER FEATURES

Water features integrated into urban environments help to soften the typically hard streetscape, provide a cooling effect, a place for children to play, and serve as a focal point.

Before the Grove Plaza was developed, the 1866 Old Boise City Canal, known as the “Grove Street Ditch” ran under the Plaza. During the development of the Grove Plaza, the canal was re-routed around the plaza to the south.

The 8th Street Concept Plan suggests water features at various locations along the corridor. These locations might be public and private plaza spaces in front of new developments like the Post Office Plaza, and the proposed plazas in the Cultural District and the 8th Street Marketplace.
PERMEABLE PAVEMENT

Objective:
- Improve mobility
- Reduce stormwater runoff

Benefits:
- Reduces demand on stormwater system
- Microorganisms consume vehicle oils from runoff
- Reduces heat island effect
- Aesthetically pleasing

Application:
- On-street parallel parking spaces

Potential Partners:
- CCDC
- ACHD
- ITD
- City of Boise Public Works

Maintenance:
- Routine street vacuuming

Opinion of Probable Cost:
- See Permeable Pavement page 25

AUTOMOBILE PARKING

Permeable Pavement Parallel Parking

Permeable pavement is proposed at all on-street parallel parking spaces. With budget limitations permeable pavement parallel parking might be applied in a rhythmic pattern or at more prominent blocks. The primary objective is to reduce stormwater runoff. The difference in color and texture of the permeable pavement helps to visually designate the parking areas from the pedestrian and traffic areas. A band of a different color paving might replace standard street paint to designate individual spaces.

Parking Dedicated to Alternative Fuel Vehicles

Designating parking spaces for alternative fuel vehicles encourages the use of alternative fuel vehicles including cars, motorcycles, scooters and bicycles. The increase of alternative fuel vehicles leads to reduced emissions and improved air quality for Boise.

Electric Vehicle Charge Station

Electric vehicle charge stations might be sponsored by the city or local businesses to encourage use of alternative fuel vehicles. A typical charge station is compact and would fit nicely at the sidewalk edge of an on-street parking space.
**Objective:**
- Improve mobility
- Bicycle-friendly corridor
- Encourage bicycle use

**Benefits:**
- Dedicated space for bicycles
- Opportunity to use permeable pavement at bike lanes
- Safety for bicyclists

**Application:**
- The entire east/west axis and multiple north/south intersecting streets

**Potential Partners:**
- CCDC
- ACHD
- ITD

**Maintenance:**
- Street sweeping/vacuuming for permeable pavement
- Repainting for striped lanes

**Opinion of Probable Cost:**
- Changing the existing bike lanes would occur in conjunction with changing the travel lane, parking and sidewalk width.
- $8.00/lf asphalt and paint for bike lanes, requires repainting
- $30.00/lf for 5'-0" wide permeable pavement bike lanes

---

**BICYCLE LANES**

With minimal alterations to the 8th Street streetscape, bicycle lanes could be accommodated with asphalt paint and minor adjustments in drive lane widths. 8th Street currently serves as a bicycle corridor for commuters and recreational users. The Green Belt connects through the Anne Frank Memorial to 8th Street bringing bicycle traffic from the southeast to the southwest to the core of downtown. The goal would be to bring bicycle lanes traveling northbound and a southbound bicycle lane along 8th Street. A contra-lane, a bicycle lane that allows cyclists to travel safely against vehicular traffic, would be required in areas of one-way traffic.

Bicycle lanes may be defined by standard white street painting and bicycle symbols. Or the lanes could be constructed with a permeable pavement material which allows stormwater to pass through. This permeable pavement would be a contrasting color to the street surface and adjacent parallel parking surface to denote the extent of the bicycle lane. Permeable pavement reduces the demand on the stormwater system, eliminates the need for re-painting of bicycle lanes and it visually dedicates a portion of the road to the cyclist. See page 25, Permeable Pavement.
BICYCLE PARKING

With the increase in bicycle use in downtown, there is a greater demand on designated bicycle parking areas. Planning for bicycle parking racks along the 8th Street corridor and the intersecting streets will be crucial to minimize bicycle parking at trees and other non-desirable areas.

Bicycle parking lots may vary in size, but could be strategically located for ease of use and access in some of the busiest areas of downtown. Bicycle racks may be individual units mounted in the sidewalk between trees or they may be a group unit in an on-street parking stall dedicated to bicycle. Design of the bicycle racks is an opportunity for artists to be creative and add character to the streetscape.

Additional bicycle parking could be located along the main entrances to the Grove Plaza. The bicycle parking might be covered and/or uncovered to accommodate events and activities in the heart of downtown. Bicycle parking racks may include vertical storage to help keep bicycles from toppling over on each other. Covered bicycle parking stations could be designed by local artists. Bicycle parking could be located in the berm along the north access to the Grove Plaza and in between trees along the south access to the Grove Plaza. As demand increases additional bicycle parking can be provided.

Objective:
Improve mobility
Secure bicycle parking

Benefits:
Encourages bicycle use
Provides secure bicycle parking
Reduces bicycle lock damage to trees and fences

Application:
Multiple installations along 8th Street and/or intersection streets

Potential Partners:
CCDC
ACHD
ITD

Maintenance:
Similar to standard bicycle storage maintenance

Opinion of Probable Cost:
$125 per rack
**CURB BULB-OUTS**

A curb bulb-out extends the sidewalk and curb lane into the parallel parking lane. This reduces the street width and is typically located at intersections. This improves visibility and reduces the crossing distance for pedestrians. The narrowing of the road encourages vehicular traffic to slow down. A curb bulb-out may occur at intersections and at mid-block.

The concept plan proposes a series of curb bulb-outs at most intersections along 8th Street. Bulb-outs may be constructed of a contrasting pavement material, pattern, or color from the sidewalks. Permeable pavement may be used at these areas as well as the installation of planter bioswales. A planter flush with the sidewalk or raised at the bulb-out will discourage pedestrians from crossing intersections outside of the crosswalks. The additional space a bulb-out adds to a sidewalk allows room for street furnishings, wayfinding elements and public art.

**Elements**

**Objective:**
- Improve mobility
- Improve pedestrian safety at intersections

**Benefits:**
- Reduces crossing distance
- Narrowed road width slows traffic
- Improves visibility at crosswalk
- Creates small public spaces at corners

**Application:**
- Intersections
- Mid-block

**Potential Partners:**
- CCDC
- ACHD
- ITD
- City of Boise Public Works
- City of Boise Parks and Recreation
- City of Boise Department of Arts and History

**Maintenance:**
- Similar to standard sidewalk maintenance

**Opinion of Probable Cost:**
$18.00/sf entire intersection includes concrete curbs, integral color concrete patterned crosswalks and intersection, stormdrains.

Does not include bioswales, artwork, street furnishings, relocation of existing utilities or storm sewer, etc.
HIGH-VISIBILITY CROSSWALKS

High-visibility crosswalks typically include white stripes painted across the road. These are easier for vehicles and pedestrians to locate. They should be a minimum of 10 feet wide. The introduction of pattern, color and varied material from the street asphalt also improves awareness of crosswalks. The crosswalk may also be raised slightly above the road surface to alert drivers.

Crosswalks are an opportunity for artists to design the pattern through changes in a materials texture and color. The design of a crosswalk might characterize a specific area. See also page 33, Paving Patterns at Crosswalks and Intersections.
Wayfinding is the ability for people to locate themselves in relation to the context of a dynamic space. Wayfinding elements provide graphic and/or audible methods to convey location and directions to pedestrians. Wayfinding elements may vary in scale and include elements that guide vehicles such as a gateway or landmark, and elements that guide pedestrians such as signage and kiosks. Public art installations and street furnishings also help to lead the pedestrian to the next place.

**Kiosks**

A kiosk is a literal wayfinding element available for public use. A series of kiosks along 8th Street would provide wayfinding information to locate themselves within the 8th Street corridor and downtown Boise and connecting them to art elements and the “Greening the Grove” project.

The frame of a kiosk might reflect the character of the immediate area and include a color coded map. The kiosk may also include a bin for brochures and maps.

Alternative “green” energy sources integrated with the kiosks could power electronic kiosks. Electronic kiosks could provide up-to-date accurate information regarding public events in downtown. Kiosks may also serve as an educational tool to provide real-time data on power usage and power generated by nearby alternative energy art installations.

**Potential Partners:**
- CCDC
- ACHD
- DBA
- City of Boise Department of Arts and History

**Maintenance:**
- Updating maps
- Refilling brochure boxes
- Routine cleanup of expired announcements

**Opinion of Probable Cost:**
$2,500-4,500 per Kiosk
STREET FURNISHINGS

Street furnishings include items found at the sidewalk like benches, planters, street lights, garbage and recycle bins, bike racks, newspaper and post boxes, transit stations, signage and banners.

Street furnishings provide a sense of scale for the pedestrian and an interactive environment. A street bench invites pedestrians to pause and enjoy the moment. Street furnishings provide wayfinding, and often reflect the character of the area.

The City of Boise has a well defined standard for most street furnishings. In the Cultural District there is an opportunity to be flexible with the selection of street furnishings. Being a relatively undeveloped part of 8th Street, there is an opportunity to depart from the city standard. A distinctive character could be developed for this area. Local artists could be commissioned to design street furnishings like benches and bike racks.
## 8th Street Concept Plan Opinion of Probable Cost

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Range - Low</th>
<th>Range - High</th>
<th>Concept Plan Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artwork - Billboard</td>
<td>$10,000.00</td>
<td>$15,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>$20,000.00</td>
<td>$50,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Artwork - Gates</td>
<td>$20,000.00</td>
<td>$50,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Artwork - Gateway/Roundabout/Traffic Island</td>
<td>$20,000.00</td>
<td>$50,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Artwork - Mural</td>
<td>$10,000.00</td>
<td>$15,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Bicycle Lane Paint</td>
<td>$8.00</td>
<td></td>
<td>/lf</td>
</tr>
<tr>
<td>Bioswale - Curb Extension</td>
<td>$36.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Bioswale - Median</td>
<td>$125.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>$125.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Demo</td>
<td>$1.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Engineered fill, compacting, etc.</td>
<td>$16.00</td>
<td></td>
<td>/yd$</td>
</tr>
<tr>
<td>Extended Paving Patterns</td>
<td>$12.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>$16.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Landscape - Planter</td>
<td>$125.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Living Wall</td>
<td>$15.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Paving - Brick</td>
<td>$12.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Paving - Concrete</td>
<td>$6.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Paving Patterns (integral color upgrade)</td>
<td>$1.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Pervious Concrete Bicycle Lane</td>
<td>$6.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>$6.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Plaza</td>
<td>$7.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Roundabout/Traffic Island</td>
<td>$5.00</td>
<td>$8.00</td>
<td>/sf</td>
</tr>
<tr>
<td>Sidewalk - Concrete</td>
<td>$6.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Site grubbing and grading</td>
<td>$1.00</td>
<td></td>
<td>/sf</td>
</tr>
<tr>
<td>Traffic Light - Pedestrian</td>
<td>$12,000.00</td>
<td></td>
<td>ea</td>
</tr>
<tr>
<td>Trees</td>
<td>$4,000.00</td>
<td></td>
<td>ea</td>
</tr>
<tr>
<td>Typical Street Block (One-way)</td>
<td>$500.00</td>
<td>$1,000.00</td>
<td>/lf</td>
</tr>
<tr>
<td>Typical Street Block (Two-way)</td>
<td>$1,000.00</td>
<td>$1,500.00</td>
<td>/lf</td>
</tr>
<tr>
<td>Water Feature - Plaza small</td>
<td>$30,000.00</td>
<td>$60,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Water Feature - Pools</td>
<td>$30,000.00</td>
<td>$100,000.00</td>
<td>ea</td>
</tr>
<tr>
<td>Water Feature - Street large</td>
<td>$30,000.00</td>
<td>$100,000.00</td>
<td>ea</td>
</tr>
</tbody>
</table>

**Note:** Opinion of Probable Cost has been provided for the purpose of helping CCDC budget and plan for potential projects. It is not meant to be a finite number and the costs will vary depending on the bidding climate and subsurface utilities that may be impacted. Opinion of Probable Cost does not include utility relocation or storm sewer relocation.
## 8th Street Concept Plan Opinion of Probable Cost  
**Spring 2011**

### River Street Intersection

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>9,600 sf</td>
<td>$1.00/sf</td>
<td>$9,600.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>9,600 sf</td>
<td>$18.00/sf</td>
<td>$172,800.00</td>
</tr>
<tr>
<td>Trees</td>
<td>1</td>
<td>$4,000.00 ea</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>225 sf</td>
<td>$125.00 ea</td>
<td>$28,125.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $294,525.00 | $414,525.00 |

### River - Fulton Street Block

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>18,300 sf</td>
<td>$1.00/sf</td>
<td>$18,300.00</td>
</tr>
<tr>
<td>Typical Street Block (One-way)</td>
<td>250 lf</td>
<td>$500.00/lf</td>
<td>$125,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>1,000 sf</td>
<td>$125.00/sf</td>
<td>$125,000.00</td>
</tr>
<tr>
<td>Trees</td>
<td>22</td>
<td>$4,000.00 ea</td>
<td>$88,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>1,225 sf</td>
<td>$6.00/sf</td>
<td>$7,350.00</td>
</tr>
<tr>
<td>Pervious Concrete Bicycle Lane</td>
<td>2,000 sf</td>
<td>$6.00/sf</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>Plaza</td>
<td>6,500 sf</td>
<td>$7.00/sf</td>
<td>$45,500.00</td>
</tr>
<tr>
<td>Paving Patterns</td>
<td>5,200 sf</td>
<td>$1.00/sf</td>
<td>$5,200.00</td>
</tr>
<tr>
<td>Water Features</td>
<td>1</td>
<td>$30,000.00</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $58,350.00 | $81,350.00 |

### Fulton Street Intersection

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>5,000 sf</td>
<td>$1.00/sf</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>5,000 sf</td>
<td>$18.00/sf</td>
<td>$80,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $175,000.00 | $295,000.00 |

### Fulton Street (East/West) 9th Street - Capitol Blvd

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>38,500 sf</td>
<td>$1.00/sf</td>
<td>$38,500.00</td>
</tr>
<tr>
<td>Typical Street Block (Two-way)</td>
<td>610 lf</td>
<td>$500.00/lf</td>
<td>$305,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>2,800 sf</td>
<td>$125.00/sf</td>
<td>$350,000.00</td>
</tr>
<tr>
<td>Trees</td>
<td>36</td>
<td>$4,000.00 ea</td>
<td>$144,000.00</td>
</tr>
<tr>
<td>Paving Patterns</td>
<td>12,000 sf</td>
<td>$1.00/sf</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>8,800 sf</td>
<td>$6.00/sf</td>
<td>$52,800.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $982,300.00 | $1,407,300.00 |

### Fulton - Myrtle Street Block

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>17,500 sf</td>
<td>$1.00/sf</td>
<td>$17,500.00</td>
</tr>
<tr>
<td>Typical Street Block (One-way)</td>
<td>250 lf</td>
<td>$500.00/lf</td>
<td>$125,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>970 sf</td>
<td>$125.00/sf</td>
<td>$121,250.00</td>
</tr>
<tr>
<td>Trees</td>
<td>17</td>
<td>$4,000.00 ea</td>
<td>$88,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>1,615 sf</td>
<td>$6.00/sf</td>
<td>$9,680.00</td>
</tr>
<tr>
<td>Pervious Concrete Bicycle Lane</td>
<td>2,000 sf</td>
<td>$6.00/sf</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>Plaza</td>
<td>8,000 sf</td>
<td>$7.00/sf</td>
<td>$56,000.00</td>
</tr>
<tr>
<td>Paving Patterns</td>
<td>2,900 sf</td>
<td>$1.00/sf</td>
<td>$2,900.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $492,340.00 | $737,340.00 |

### Myrtle Street Intersection

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Cost</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>17,350 sf</td>
<td>$1.00/sf</td>
<td>$17,350.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>7,315 sf</td>
<td>$18.00/sf</td>
<td>$131,670.00</td>
</tr>
<tr>
<td>Extended Paving Pattern</td>
<td>6,500 sf</td>
<td>$12.00/sf</td>
<td>$78,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00 ea</td>
<td>$80,000.00</td>
</tr>
</tbody>
</table>

**TOTAL**  
| Price Range | $307,020.00 | $427,020.00 |
## 8th Street Concept Plan

### Opinion of Probable Cost

**Myrtle - Broad Street Block**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>15,600 sf</td>
<td>$1.00/sf</td>
<td>$15,600.00</td>
</tr>
<tr>
<td>Typical Street Block (One-way)</td>
<td>250 lf</td>
<td>$600.00/sf</td>
<td>$150,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>920 sf</td>
<td>$125.00/sf</td>
<td>$115,000.00</td>
</tr>
<tr>
<td>Trees</td>
<td>21 ea</td>
<td>$4,000.00/ea</td>
<td>$84,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>1,200 sf</td>
<td>$6.00/sf</td>
<td>$7,200.00</td>
</tr>
<tr>
<td>Pervious Concrete Bicycle Lane</td>
<td>1,200 sf</td>
<td>$6.00/sf</td>
<td>$7,200.00</td>
</tr>
<tr>
<td>Plaza</td>
<td>6,100</td>
<td>$7.00/sf</td>
<td>$42,700.00</td>
</tr>
<tr>
<td>Paving Pattern</td>
<td>380</td>
<td>$1.00/sf</td>
<td>$380.00</td>
</tr>
<tr>
<td>Water Feature</td>
<td>1</td>
<td>$30,000.00/ea</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00/ea</td>
<td>$80,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$507,060.00</strong></td>
</tr>
</tbody>
</table>

**Broad Street intersection**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>900 sf</td>
<td>$1.00/sf</td>
<td>$900.00</td>
</tr>
<tr>
<td>Curb Bulb-out - SW corner</td>
<td>900 sf</td>
<td>$18.00/sf</td>
<td>$16,200.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>3</td>
<td>$20,000.00/ea</td>
<td>$60,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$77,100.00</strong></td>
</tr>
</tbody>
</table>

**Broad - Front Street Block**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Lane (Southbound) Painted</td>
<td>275 lf</td>
<td>$8.00/sf</td>
<td>$2,200.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>2</td>
<td>$20,000.00/ea</td>
<td>$40,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$42,200.00</strong></td>
</tr>
</tbody>
</table>

**Front Street Intersection**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>8,800 sf</td>
<td>$1.00/sf</td>
<td>$8,800.00</td>
</tr>
<tr>
<td>Paving Pattern</td>
<td>2,445 sf</td>
<td>$18.00/sf</td>
<td>$44,010.00</td>
</tr>
<tr>
<td>Extended Paving Pattern</td>
<td>6,355</td>
<td>$12.00/sf</td>
<td>$76,260.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00/ea</td>
<td>$80,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$209,070.00</strong></td>
</tr>
</tbody>
</table>

**Front - Main Street Block**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo (for Bike Racks)</td>
<td>1,575 sf</td>
<td>$1.00/sf</td>
<td>$1,575.00</td>
</tr>
<tr>
<td>Bicycle Racks</td>
<td>70</td>
<td>$125.00/ea</td>
<td>$8,750.00</td>
</tr>
<tr>
<td>Paving - Concrete</td>
<td>1,200 sf</td>
<td>$6.00/sf</td>
<td>$7,200.00</td>
</tr>
<tr>
<td>Paving - Brick</td>
<td>394</td>
<td>$12.00</td>
<td>$4,728.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00/ea</td>
<td>$80,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$102,133.00</strong></td>
</tr>
</tbody>
</table>

**Grove Pocket Park**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site grubbing and grading</td>
<td>1,000 sf</td>
<td>$1.00/sf</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Permeable Paver Plaza</td>
<td>667 sf</td>
<td>$7.00/sf</td>
<td>$4,669.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>333 sf</td>
<td>$125.00/sf</td>
<td>$41,625.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>1</td>
<td>$20,000.00/ea</td>
<td>$20,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$102,133.00</strong></td>
</tr>
</tbody>
</table>

**Main Street Intersection**

<table>
<thead>
<tr>
<th>Item</th>
<th>Area</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>8,100 sf</td>
<td>$1.00/sf</td>
<td>$8,100.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>3,650 sf</td>
<td>$18.00</td>
<td>$64,800.00</td>
</tr>
<tr>
<td>Extended Paving Pattern</td>
<td>4,500 sf</td>
<td>$12.00/sf</td>
<td>$54,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>4</td>
<td>$20,000.00/ea</td>
<td>$80,000.00</td>
</tr>
<tr>
<td>Artwork - Gates</td>
<td>2</td>
<td>$20,000.00/ea</td>
<td>$40,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$245,900.00</strong></td>
</tr>
</tbody>
</table>

44
### Whole Park at 8th and Main Street

<table>
<thead>
<tr>
<th>Item</th>
<th>SF</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo existing wall</td>
<td>370 sf</td>
<td>$1.00/sf</td>
<td>$370.00</td>
</tr>
<tr>
<td>Engineered fill, compaction, etc.</td>
<td>8,075 yd³</td>
<td>$16.00/yd³</td>
<td>$129,200.00</td>
</tr>
<tr>
<td>Plaza</td>
<td>3,650 sf</td>
<td>$7.00/sf</td>
<td>$25,550.00</td>
</tr>
<tr>
<td>Landscape - Planter</td>
<td>7,250 sf</td>
<td>$12.00/sf</td>
<td>$90,625.00</td>
</tr>
<tr>
<td>Living Wall - 25w x 20h with metal frame, planters, irrigation, plants, labor</td>
<td>10</td>
<td>$7,500.00</td>
<td>$75,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>2 ea</td>
<td>$20,000.00 ea</td>
<td>$40,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$1,176,370.00</strong></td>
</tr>
</tbody>
</table>

### Main - Idaho Street Block

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>Bike Lanes Painted</td>
<td>1,100 if</td>
<td>$8.00/lf</td>
<td>$8,800.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>2 ea</td>
<td>$20,000.00 ea</td>
<td>$40,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$48,800.00</strong></td>
</tr>
</tbody>
</table>

### Idaho Street Intersection

<table>
<thead>
<tr>
<th>Item</th>
<th>SF</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>8,900 sf</td>
<td>$1.00/sf</td>
<td>$8,900.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>3,775 sf</td>
<td>$18.00/sf</td>
<td>$67,650.00</td>
</tr>
<tr>
<td>Extended Paving Patterns</td>
<td>5,125 sf</td>
<td>$12.00/sf</td>
<td>$61,500.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>3 ea</td>
<td>$20,000.00 ea</td>
<td>$60,000.00 ea</td>
</tr>
<tr>
<td>Artwork - Gates</td>
<td>2 ea</td>
<td>$20,000.00 ea</td>
<td>$40,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$238,350.00</strong></td>
</tr>
</tbody>
</table>

### Idaho - Bannock Street Block

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>Bike Lanes Painted</td>
<td>1,100 if</td>
<td>$8.00/lf</td>
<td>$8,800.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>2 ea</td>
<td>$20,000.00 ea</td>
<td>$40,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$48,800.00</strong></td>
</tr>
</tbody>
</table>

### Bannock Street Intersection

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>5,700</td>
<td>$1.00/sf</td>
<td>$5,700.00</td>
</tr>
<tr>
<td>Intersection with bulb-outs</td>
<td>5,700 if</td>
<td>$18.00/if</td>
<td>$102,600.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>3 ea</td>
<td>$20,000.00 ea</td>
<td>$60,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$168,300.00</strong></td>
</tr>
</tbody>
</table>

### Post Office Plaza

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>4,400</td>
<td>$1.00/sf</td>
<td>$4,400.00</td>
</tr>
<tr>
<td>Plaza</td>
<td>3,600</td>
<td>$7.00/sf</td>
<td>$25,200.00</td>
</tr>
<tr>
<td>Landscape - Planter</td>
<td>625 sf</td>
<td>$125.00/sf</td>
<td>$78,125.00</td>
</tr>
<tr>
<td>Trees</td>
<td>2 ea</td>
<td>$4,000.00 ea</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Water Feature</td>
<td>1 ea</td>
<td>$30,000.00 ea</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>1 ea</td>
<td>$20,000.00 ea</td>
<td>$20,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$165,725.00</strong></td>
</tr>
</tbody>
</table>

### Bannock - Jefferson Street Block

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo</td>
<td>21,000 sf</td>
<td>$1.00/sf</td>
<td>$21,000.00</td>
</tr>
<tr>
<td>Typical Street Block (Two-way)</td>
<td>246 if</td>
<td>$1,000.00 if</td>
<td>$246,000.00</td>
</tr>
<tr>
<td>Trees</td>
<td>13 ea</td>
<td>$4,000.00 ea</td>
<td>$52,000.00</td>
</tr>
<tr>
<td>Bioswale - Planter</td>
<td>525 sf</td>
<td>$125.00/sf</td>
<td>$65,625.00</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>8,000 sf</td>
<td>$6.00/sf</td>
<td>$48,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Parking</td>
<td>3,000 sf</td>
<td>$6.00/sf</td>
<td>$18,000.00</td>
</tr>
<tr>
<td>Pervious Concrete Bicycle Lane</td>
<td>1,500 sf</td>
<td>$6.00/sf</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Artwork - Curb</td>
<td>2 ea</td>
<td>$20,000.00 ea</td>
<td>$40,000.00 ea</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$495,625.00</strong></td>
</tr>
</tbody>
</table>

45
REFERENCES

BOISE DOCUMENTS AND RESOURCES
Westside Downtown Framework Master Plan, 2001
Old Boise – Eastside Master Plan, 2004
Downtown Urban Design Plan, 1986
River Street – Myrtle Street Master Plan, 2004
Boise R/UDAT, 1985
Downtown Arts & Culture Plan, 2007
Linen District Cultural Master Plan, 2010
Pioneer Corridor Design Competition, 2003
Downtown Boise Mobility Study, 2005
Downtown Boise Elements of Continuity, 2007
Downtown Boise Streetscape Standards, 2007
Communities In Motion
Blueprint Boise, 2010
ACHD Section 5100 – Traffic Engineering Standards
ACHD Section 5108 - Proposed Roundabout Policy
ACHD Roadways to Bikeways Plan, Adopted May 27, 2009
http://www.achdidaho.org/Projects/PublicProject.aspx?ProjectID=77
ACHD Local Design Guide for ACHD Facilities, October 2005
http://www.achdidaho.org/departments/PP/Docs/ped-bike_plan/ch.5_local_design_guide.pdf
Grove Street Illuminated & Boise Canal by Amy Westover, Idaho Artist
Art piece located at 9th and Grove Streets, www.amywestover.com
Capital City Development Corporation Website, www.cccdboise.com
Ada County Highway District Website, www.achdidaho.org
Capital City Public Market, www.capitalcitypublicmarket.com
8th Street Marketplace Website, www.8thstreetmarketplace.com
Downtown Boise Association Website, www.downtownboise.org

GREEN INFRASTRUCTURE
http://www.epa.gov/npdes/pubs/gi_arra_green_streets.pdf
Green Infrastructure in Arid and Semi-Arid Climates
Environmental Protection Agency EPA-833-B-10-002, May 2010
http://www.epa.gov/npdes/pubs/gi_arid_climate_fs.pdf
Greening America’s Capitals, current project by the US Environmental Protection Agency and Smart Growth
http://www.epa.gov/smartgrowth/greencapitals.htm

From Gray Funnels to Green Sponges Audio Program hosted by Jamal Kadri
http://www.epa.gov/owow_keep/podcasts/grayfunnelsgreensponges.html

Green Street Initiatives Around the United States
http://www.epa.gov/owow_keep/podcasts/greenstreetusa.html

City of Portland Green Street Program, Portland Bureau of Environmental Services
http://www.portlandonline.com/BES/index.cfm?c=44407

Green Street Construction Guide, Environmental Services, City of Portland
http://www.portlandonline.com/bes/index.cfm?a=228860&c=45379

Transforming Gray Space into “Green Space”, 2009, Kevin Robert Perry, ASLA, Nevue Ngan Associates
http://www.sustainableskylineskc.org/assets/PL2Oct28speakers/Kevin-Perry.pdf


Street Edge Alternatives, Seattle Public Utilities
http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/StreetEdgeAlternatives/index.htm


APPROACHES TO GREEN INFRASTRUCTURE DESIGN


Local Water Policy Innovation: A Road Map for Community Based Stormwater Solutions, 2008, Brent Denzin, Midwest Environmental Advocates

http://www.crwa.org/projects/docs/BlueCitiesGuide.pdf

Parking Spaces/ Community Places: Finding the Balance through Smart Growth Solutions, 2006, Environmental Protection Agency, EPA 231-k-06-001
http://www.epa.gov/smartgrowth/pdf/EPAParkingSpaces06.pdf


REFERENCES

BIOSWALEs

Stormwater Solutions Handbook, Environmental Services, City of Portland, Oregon
http://www.portlandonline.com/bes/index.cfm?c=43110&a=129057

High Point Community Site Drainage Technical Standards, 2006, SvR Design Company

Green Roofs

EPA Green Roofs for Stormwater Runoff Control, 2009, US Environmental Protection Agency,

Green Roofs as Urban Ecosystems: Ecological Structures, Functions, and Services, Erica Oberndorfer,

Green Roofs for Healthy Cities Website, Your Green Roof Infrastructure Industry Association
http://www.greenroofs.org/

Seattle Green Roof Evaluation Project, 2007, Drew A. Gangnes, P.E.
http://www.seattle.gov/dpd/stellent/groups/pan/@pan/@sustainableblding/documents/web_informational/
ddpdp_019828.pdf

Stormwater Monitoring Two Ecoroofs in Portland, Oregon, USA, City of Portland, Bureau of Environmental
Services
http://www.portlandonline.com/shared/cfm/image.cfm?id=63098

PERMEABLE PAVEMENT

Long-Term Stormwater Quantity and Quality Performance of Permeable Pavement Systems, Benjamin
O. Brattebo and Derek B. Booth, Center for Water and Watershed Studies

Hydrologic and Water Quality Comparison of Four Types of Permeable Pavement and Standard Asphalt
in Eastern North Carolina

ICPI Interlocking Concrete Pavement Institute, http://www.icpi.org/node/553

GREEN PARKING

Design Guidelines for ‘Greening’ Surface Parking Lots, 2007, Toronto City Planning
http://www.toronto.ca/planning/urbdesign/greening_parking_lots.htm


Bioretention: Commercial/Industrial/Institutional (Ultra Urban Retrofits), 2011, Low Impact Development
Center, Inc., http://www.lid-stormwater.net/biocomind_home.htm

VEHICULAR TRAVEL DIRECTION

Downtown Streets: Are We Strangling Ourselves on One-Way Networks, 1999, G. Wade Walker, Walter
M. Kulash and Brian T. McHugh, TRB Circular E-C019: Urban Street Symposium
8TH STREET CONCEPT PLAN  

REFERENCES

ROUNDABOUTS
Roundabouts: An Informational Guide, FHWA-RD-00-67, 2000, US Department of Transportation Federal Highway Administration
http://safety.fhwa.dot.gov/intersection
Modern Roundabouts the Web Site, http://roundabout.kittelson.com/
Roundabouts: An Information Guide, 2000, Federal Highway Administration, FHWA-RD-00-067

TRAFFIC CALMING
Traffic Calming.org, Fehr & Peers Transportation Consultants, 2008

PEDESTRIAN SAFETY
Pedestrian Safety at Intersections, U.S. Department of Transportation Federal Highway Administration, Institute of Transportation Engineers, April 2004,
http://www.ite.org/technical/IntersectionSafety/Pedestrians.pdf

STREET FURNITURE
Photo, A Bin on the Street by Moonjoo Jo

PRODUCTS
Pavingstones, LLC
Plant and Sales Office: 9050 Liberty Lane, Melba, Idaho 83641
Phone: 208-887-9600
Email: pavingstoneman@wmconnect.com
Web: www.pavingstonesid.com
Buy Idaho Product and Service

8TH STREET CONCEPT PLAN PROJECT TEAM
Katina Dutton, Development Manager, Capital City Development Corporation (CCDC)
Scot Oliver, Special Projects Manager, Capital City Development Corporation (CCDC)
Phil Kushlan, Executive Director, Capital City Development Corporation (CCDC)
Karen Bubb, Public Arts Manager, City of Boise Arts and History Department
Bruce Poe, Principal Architect, Modus Architecture
Misty Kreissler, Project Manager, Modus Architecture
Amanda Swails, Project Manager, Modus Architecture
Dennis Robinson, Owner, CM Company, Inc.
Eric Jensen, Landscape Architect, JensenBelts Associates