Location
The Hawthorne Bridge is a truss bridge that spans the Willamette River joining Hawthorne Boulevard on the east side with Madison Street on the west side of the river.

Description
The Hawthorne Bridge is the oldest highway bridge in Portland. It is traveled by approximately 2,000 pedestrians and 4,800 bicyclists each day.

Bicycle and Pedestrian Benefits
The bridge went through a $21 million restoration from 1998-99. During the restoration, the walkways were widened from six feet to 10 feet to accommodate bicycle and pedestrian traffic.

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Notes
# 2  BLUE BIKE LANE

Location
SE Hawthorne Boulevard at 3rd Avenue

Description
Blue bike lanes are colored markings on roadways that have been used in Portland since 1997. Stop #2 is a blue bike lane found at the end of the Hawthorne Bridge going eastbound, crossing the McLoughlin off-ramp lane. A flashing yellow signal with a “yield to bikes” sign accompanies the blue bike lane.

Bicycle and Pedestrian Benefits
Blue bike lanes are roadway treatments used in high motorist/bicycle conflict areas. Blue bike lanes provide a designated space in which cyclists may ride at high conflict areas. They also minimize weaving and help motorists predict where to find cyclists. This location also employs a flashing yellow signal to make motorists aware of the bike lane and bring attention to cyclists crossing the roadway.

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Notes
Location
SE Hawthorne Boulevard at 7th Avenue

Description
A bike box is a green box on the road with a white bicycle symbol painted inside that is connected to a bike lane at an intersection. Bicyclists are to stop at the red light at an intersection and position themselves in the bike box to be in plain view of motorized vehicles. Stop # 3 is located at Hawthorne Boulevard and 7th Avenue and was Portland’s first green bike box.

Bicycle and Pedestrian Benefits
Bike boxes are intersection treatments designed to prevent bicycle/car collisions especially “right hooks” – collisions between drivers turning right and bicyclists going straight at an intersection. At red lights cyclists are more visible to motorists by being in front of them. Through visibility and awareness, bike boxes create a safer environment for both cyclists and motorist.

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Notes
# 4  WAYFINDING

**Location**
SE Ladd AVE & Palm Street

**Description**
Wayfinding signs are route identification signs with a green background usually pole mounted along bicycle routes. Wayfinding signs include the different destinations along the bike route as well as the distance to them and average time to the destination by bicycle. Bike dots, also known as bicycle boulevard pavement markings, are painted on roadway pavement and are used to designate bicycle routes as bicycle boulevards. They are white in color and 1-foot in diameter.

**Bicycle and Pedestrian Benefits**
Wayfinding signs direct cyclists to destinations along the bicycle route. Bike dots are meant to guide cyclists along bicycle boulevards which can be more difficult to follow than bicycle lanes. While smaller than “sharrow” lane markings, they are intended to be visible to cyclists but not motorists in order that motorized traffic is not attracted to utilize the bicycle boulevards. Bike dots are also placed on the roadway in a manner that large amounts of traffic volume are not running over them to eliminate any need for maintenance of the several hundred bike dots city wide. Bike dots are designed to last as long as the pavement they are on.

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**Notes**
# 5  LADD’S CIRCLE

Location
SE Ladd Avenue and Ladd Circle

Description
Roundabouts are widely used in countries around the world. In Portland, the Bureau of Transportation System Management is investigating the use of roundabouts as a safer intersection treatment to that of the classic two-way or four-way stop controlled intersections. Stop #5 is a roundabout found at the intersection of Ladd and Harrison in Ladd’s Addition, one of the oldest residential districts in the City of Portland.

Bicycle and Pedestrian Benefits
One of the significant benefits of roundabouts is the improvement of safety due to less conflict zones inherit in the design. Generally, roundabouts offer less delay than stop controlled or signalized intersections and allow for free flow travel by bike.

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Notes
# 6 DIVERTER

**Location**
SE Hawthorne Boulevard at 2nd Avenue

**Description**
Diverters are concrete medians which limit motorized vehicle access while allowing bicycle traffic access through openings in the diverter. Stop #6 is a diverter found at Harrison and 20th and allows bicyclists traveling east and west along Harrison access through an opening in the middle of the diverter. Auto access is limited by forcing drivers traveling east-west to turn right at the intersection.

**Bicycle and Pedestrian Benefits**
Diverters are one of the traffic calming tools in the Bicycle Boulevard toolbox. Diverters are intended to make streets less appealing to motorized vehicle traffic and help maintain low traffic volumes required for successful Bicycle Boulevards.

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**Notes**
# 7 BIKE BLVD TREATMENT

**Location**
SE Harrison St. at 26th Avenue

**Description**
Bike Boulevard treatments on this section of the Bicycle Boulevard include a curb extension at Harrison and 26th. Curb extensions are also known as bulbouts, popouts, or neckdowns and consist of an extension of a raised curb to decrease crossing distance of the roadway.

**Bicycle and Pedestrian Benefits**
Curb extensions are implemented to increase a drivers' awareness of pedestrians and bicyclists crossing at a street intersection or midblock by decreasing crossing distance. The shorter crossing distance helps reduce pedestrian exposure to motorized vehicular traffic and reduce traffic speeds. Studies indicate curb extensions combined with a marked crosswalk increases yielding of motorized vehicles to pedestrians waiting to cross the street.

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**Notes**
UNIQUE SIGNAL

Location
SE Clinton & 39th Avenue

Description
Stop # 8 is found at the intersection of SE Clinton Street and 39th Avenue. The signal is unique in that there is a bike box on both the north and south approach of 39th Avenue that leads to a “bike only” lane with contra flow vehicular traffic. These bike boxes are not the typical green box on the road and consist of a white outline with a white bicycle symbol painted inside that is connected to a bike lane at the intersection. Bicyclists are to stop at the red light at an intersection and position themselves in the bike box to be in plain view of motorized vehicles.

Bicycle and Pedestrian Benefits
This unique signal and bike box allows bicyclists to cross Clinton Street, a 4-lane high traffic volume arterial, in a safer manner. Due to the lane configuration along 39th Avenue, bicyclists are allowed two-way travel while vehicular traffic is allowed only one-way travel. The intersection marks the end of vehicular traffic traveling north or south on 39th Avenue and forces motorized vehicles to turn onto Clinton Street. The termination of motorized vehicle access at this intersection produces several conflict points that the bike boxes and signal attempt to address.

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Notes
# 9 BICYCLE BLVD
INTERSECTION
TREATMENT

Location
SE 41st Avenue & Lincoln

Description
Stop # 9 is a potential place to stop at the intersection of SE 41st Avenue and SE Lincoln Street. The stop illustrates the intersection treatment along the Lincoln

Bicycle and Pedestrian Benefits
The popular Lincoln Street Bicycle Boulevard runs east-west and is perpendicular to the 41st Avenue designated bike route. A zebra crosswalk across Lincoln Street provides a designated area for pedestrians to cross and visually helps cyclists expect pedestrians to reduce the chance of conflict at this intersection.

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Notes
# 10  HALF-SIGNAL

### Location
SE Hawthorne Blvd & 41st Avenue

### Description
A Half-Signal intersection is a pedestrian or bicyclist activated signal where low volume side streets (41st Avenue) are controlled by stop signs and high volume arterials (Hawthorne Boulevard) have priority unless a call to the signal along the arterial is made by a pedestrian or bicyclist attempting to cross the arterial. Once the signal has been activated the arterial is given a red light to allow the pedestrian or bicyclist to cross. Stop # 10 is a Half-Signal located at SE Hawthorne Boulevard and SE 41st Avenue. The half-

### Bicycle and Pedestrian Benefits
Motorists on high volume streets are less likely to stop for pedestrians and bicyclists unless impeded by a traffic light. Studies show that pedestrians and cyclists become impatient after waiting for a gap in traffic to cross a street for more than thirty seconds. Half-Signals are pedestrian or cyclist actuated lights that stop arterial traffic only and assist pedestrians and bicyclists cross high volume streets. The use of a half-signal at this intersection in coordination with curb extensions provides for a safer crossing environment while costing less than a full signal implementation.

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### Notes
# 11  HALF-SIGNAL

**Location**  
SE Taylor Street & 39th Avenue

**Description**  
A Half-Signal intersection is a pedestrian or bicyclist activated signal where low volume side streets (39th Avenue) are controlled by stop signs and high volume arterials (Taylor Street) have priority unless a call to the signal along the arterial is made by a pedestrian or bicyclist attempting to cross the arterial. Once the signal has been activated the arterial is given a red light to allow the pedestrian or bicyclist to cross. The half-signal at this intersection is supplemented by a curb extension.

**Bicycle and Pedestrian Benefits**  
Motorists on high volume streets are less likely to stop for pedestrians and bicyclists unless impeded by a traffic light. Studies show that pedestrians and cyclists become impatient after waiting for a gap in traffic to cross a street for more than thirty seconds. Half-Signals are pedestrian and/or cyclist actuated lights that stop arterial traffic only and assist pedestrians and bicyclists cross high volume streets in a safe manner. The use of a half-signal at this intersection in coordination with curb extensions provides for a safer crossing environment while costing less than full signal implementation.

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**Notes**
ON-STREET BIKE PARKING

Location
SE Belmont Street & 34th Avenue

Description
On-street bike parking facilities were installed in front of the very popular Stumptown Coffee location on Belmont Street in June of 2007. They are also known as on-street bike parking “corrals” and consist of staple racks in a designated, visible area on the roadway right-of-way.

Bicycle and Pedestrian Benefits
On-street bike parking “corrals” not only provides valuable bike parking facilities for riders but also creates a buffer for pedestrians from vehicle traffic. A buffer from vehicle traffic creates a safer and more pleasant walking experience along Belmont’s commercial corridor. After nearly two years the on-street bike parking “corrals” has been lauded a success by both bicyclists and area business owners. More are planned at locations around the city.

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Notes
# 13 STUMPTOWN COFFEE

**Location**
3356 SE Belmont St.

**Description**
Stumptown Coffee Roasters is an independent coffee roaster and retailer based in Portland, Oregon.

**Bicycle and Pedestrian Benefits**
In front of Stumptown Coffee Roasters’ shop, two prime parking spots for cars were replaced with an on-street “bike corral” that holds up to 22 bikes. The bike corral racks were consistently full within the first week.

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**Notes**
# 14  BIKE TURN LANE

**Location**
SE Stark Street & 41st Avenue

**Description**
Stop #14 is an unsignalized left-turn bike lane that assists cyclists using the Bike Boulevard on SE 41st Avenue to cross SE Stark Street.

**Bicycle and Pedestrian Benefits**
The left-turn bike lane is a designated area that assists cyclists make left turns on SE Stark Street to connect to the SE 41st Street Bicycle Boulevard going either northbound or southbound in a safer manner. Cyclists are more visible to motorists within the bike turn lanes in the middle of the roadway and motorists know where to expect bicycles. Bicyclists can then proceed with the left turn when there is a gap between vehicles they feel comfortable crossing.

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**Notes**
# 15 HYBRID SIGNAL

**Location**
SE Burnside Street & 41st Avenue

**Description**
A Hybrid Signal is also commonly referred to as a High Intensity Activated Walk (HAWK) Signal. This Hybrid Signal is at the intersection of E Burnside Street and SE 41st Street. The signal was constructed in 2006 and was activated for use in October of the same year.

**Bicycle and Pedestrian Benefits**
In 1998 the Portland Office of Transportation identified this intersection as the most difficult to cross for cyclists over the entire 40’s Bikeway corridor. The HAWK Signal provides a curbside activation button for both bicyclists and pedestrians. Once activated, the signal stops automotive traffic along Burnside Street to allow for safer crossing of Burnside for cyclists and pedestrians. When the bicycle/pedestrian cycle is complete, the signal is blanked out (turned off) to allow for normal vehicular free flow along Burnside.

The HAWK Signal remains under consideration for inclusion in the Federal Manual on Uniform Traffic Control Devices (MUTCD) approved list of traffic control devices. However, this type of signal has been widely used in Tucson, AZ where it has successfully reduced the number of pedestrian crashes.

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**Notes**
**Location**
NE Glisan Street & 41st Avenue

**Description**
A Half-Signal intersection is a pedestrian or bicyclist activated signal where low volume side streets (41st Avenue) are controlled by stop signs and high volume arterials (Glisan Street) have priority unless a call to the signal along the arterial is made by a pedestrian or bicyclist attempting to cross the arterial. Once the signal has been activated the arterial is given a red light to allow pedestrians or bicyclists to cross. The half-signal at this intersection is supplemented by a curb extension.

**Bicycle and Pedestrian Benefits**
Motorists on high volume streets are less likely to stop for pedestrians and bicyclists unless impeded by a traffic light. Studies show that pedestrians and cyclists become impatient after waiting for a gap in traffic to cross a street for more than thirty seconds. Half-Signals are pedestrian and/or cyclist actuated lights that stop arterial traffic only and assist pedestrians and bicyclists cross high volume streets in a safe manner. The use of a half-signal at this intersection in coordination with curb extensions provides for a safer crossing environment while costing less than full signal implementation.

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**Notes**
# 17   ROAD DIET

Location
NE Glisan Street

Description
A Road Diet is a treatment given to an urban roadway in which the number of lanes is reduced, and the freed space is converted to on-street parking, bike lanes, landscaping, walkways, or medians.

Bicycle and Pedestrian Benefits
The inclusion of bike lanes on converted road diets is the biggest benefit to bicyclists. On-street parking creates a buffer between pedestrians and vehicular traffic, providing a safer walking environment. Shorter crossing distances for pedestrians and slower vehicle speeds along road diets also encourages a more pedestrian friendly setting.

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Notes
# 18 CONTRAFLOW BIKE LANE

**Location**
NE Sandy Blvd. & 22nd Ave

**Description**
A contraflow bike lane is a bike lane found on a one way street with an oncoming bike lane traveling in the opposing direction. This facility is found on NE 22nd Avenue north of NE Sandy Boulevard.

**Bicycle and Pedestrian Benefits**
While riding a bike against oncoming vehicular traffic might sound a bit scary to some cyclists, a contraflow bike lane is great way to increase mobility for cyclists although there isn’t enough right-of-way for two vehicle lanes. This type of treatment would only be used on narrow streets where motor vehicle speeds are kept to a minimum.

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**Notes**
# 19  BROADWAY /WILLIAMS CONFLICTS

**Location**
NE Broadway St & Williams Ave

**Description**
This is a five-legged intersection where Broadway Street is a one-way roadway traveling westbound and Williams Avenue is a one-way roadway traveling northbound. Motorists traveling along Broadway in the far right lane can turn onto Williams or the I-5 ramp. Motorists in the second motor lane from the curb must either turn right onto the I-5 ramp or veer left.

**Bicycle and Pedestrian Benefits**
Having a bike lane on the right of right-turning traffic when the bicycle traffic is not allowed to turn right produces a potential conflict. It is recommended that bicyclists merge to the left early, so you have plenty of time and room to get to the left of the right-turning traffic before it gets to its turning points. Ride through the intersection, and then merge back to the curb when traffic evens out.

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**Notes**
# 20  BLUE BIKE LANE

**Location**
NE Broadway Boulevard & Interstate

**Description**
Blue bike lanes are colored markings on roadways that have been used in Portland since 1997.

**Bicycle and Pedestrian Benefits**
Blue bike lanes are roadway treatments used in high motorist/bicycle conflict areas. Blue bike lanes provide a designated space in which cyclists may ride at high conflict areas. They also minimize weaving and help motorists predict where to find cyclists.

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**Notes**
# 21 BIKE SIGNALHEAD/ BIKE PHASE

Location
Broadway Bridge at NW Lovejoy & NW Broadway.

Description
A bike signalhead and bike phase can be found on the west end of the Broadway Bridge.

Bicycle and Pedestrian Benefits
The bike signal head and bike phase is a dedicated signalized movement which gives priority to cyclists crossing the span of the bridge on to NW Broadway. It prohibits right turns on red for motorists and provides a green signal for bicyclists to cross when the push button is pressed by the cyclist.

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