



BETTER NAITO

2017 REPORT

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PBOT
PORTLAND BUREAU OF TRANSPORTATION



**BETTER
NAITO**

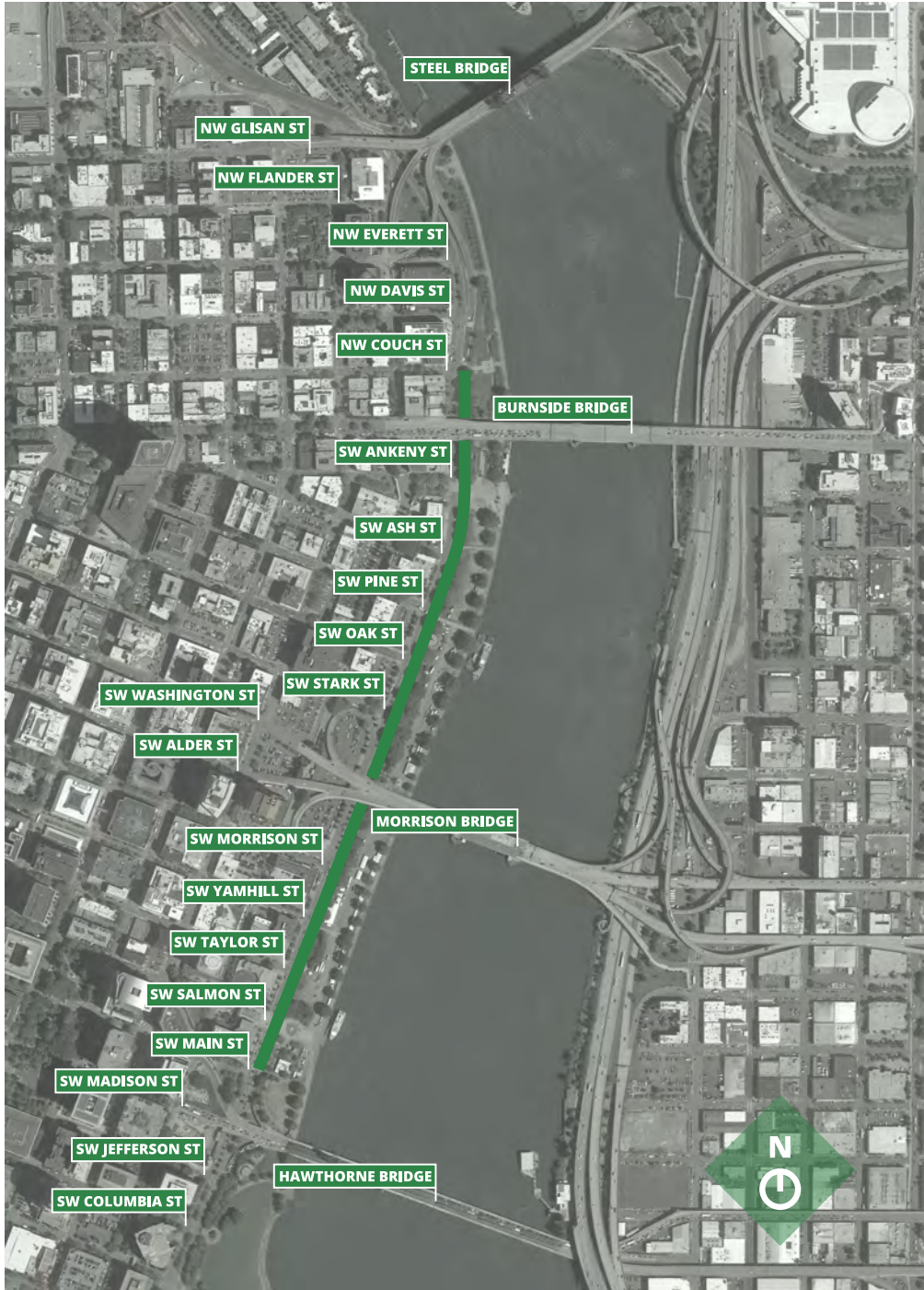
SCOPE

The aim of this report is to document the implementation of the 2017 Better Naito project. This report will serve as a quick reference, providing key information on the project background, operational and administrative details, summary of findings, and its relation to other current and future projects.

In addition, the report compiles and analyzes the data collected during Better Naito under Findings, which have been organized into following sub-headings: *Travel Times, Volumes, Mode-Split, and Quality of Service*. Finally, the lessons learned during the 2017 Better Naito season have been included to improve future Better Naito deployments as well as to improve the pilot project process.

KEY FINDINGS

- During morning peak commute hours (7:00 AM), travel time increased by 1:28 (Minutes:Seconds)
- During afternoon peak commute hours (4:00 PM), travel time increased by 1:33 (Minutes: Seconds)
- 393,173 one-way trips were taken on Better Naito by cyclists
- Cyclists were twice as likely to ride on Better Naito than the Waterfront Trail
- According to Ride Report, Better Naito was rated as “Great” by 94-96% of users



BACKGROUND

In 1974, the City of Portland closed Harbor Drive and converted the six-lane freeway into a 36-acre park along the west bank of the Willamette River in downtown Portland, Oregon. Since opening to the public in 1978, Governor Tom McCall Waterfront Park has become one of the most popular recreational destination in the city for both residents and tourists. The park hosts many of the region's largest festivals, drawing almost 700,000 visitors between April and November every year, including over 15,000 people per day during the peak season.

During these major events, the existing transportation infrastructure around Waterfront Park is unable to meet the increased demand—people are often forced to walk in a bike lane or in a vehicular travel lane exposed to high-speed traffic. In response, Better Block PDX, a local nonprofit advocacy for public spaces, collaborated with a team of civil engineering students from Portland State University to design a pilot project to help manage the influx of visitors and create a friendlier and safer environment for people walking and biking on NW/SW Naito Parkway.

The project, known as Better Naito, proposed converting one northbound motor vehicle lane on NW/SW Naito Parkway into a protected space featuring dedicated bicycle and pedestrian lanes using traffic cones. The proposed design provided physical separation from motor vehicles and created a safer space for people to travel to and access these events. Moreover, the clear delineation would reduce conflicts between pedestrians, cyclists, and drivers along Waterfront Park.

During Summer 2015, Better Block PDX obtained permits from the Portland Bureau of Transportation (PBOT) and tested the pilot project at two key festivals: Rose Festival (May 22 to June 5) and Oregon Brewers Festival (July 21 to July 27). Based on the success of the first season, Better Block PDX implemented the project again during Summer 2016 for three months to improve the Waterfront Park experience during its busiest season.

In 2017, after two seasons of volunteer-led efforts, Portland's City Council designated funding and directed PBOT to establish Better Naito as a city-led project.

Former Mayor Charlie Hales was a vocal advocate of Better Naito, and requested PBOT to develop a range of options to improve upon the volunteer-led efforts, and to bring them before City Council for consideration. PBOT scoped three scenarios:



A low cost, 5-year seasonal implementation of the original design using removable, white plastic bollards.



A moderate cost, permanent solution using concrete curbs with thermoplastic pavement markers and paint to demarcate pedestrian and bicycle spaces.



A higher cost, high-quality, elevated cycle track with sidewalk for pedestrians and landscaping elements.

Ultimately, the Council opted to fund the first option, using removable, white plastic posts to delineate and convert one northbound motor vehicle lane on NW/SW Naito Parkway into a continuous protected pedestrian and bicycle right of way—extending about 0.7 miles from SW Main St to NW Couch St.

PBOT installed the 2017 Better Naito on April 28 and removed it on September 30.

Opposite page: Some of the events supported by Better Naito.

MUSICFESTNW
PRESENTS

Project Pabst

PORTLAND, OR
AUGUST 26-27



OREGON SYMPHONY
CARLOS KALMAR
MUSIC DIRECTOR



FINDINGS

An important component of Better Naito is to measure and analyze the impacts of the project on traffic performance. By basing traffic improvements on real operations, transportation planners and engineers can improve service at all scales of the networks—from single road segments to entire systems.

Current methods and technologies, including real-time traffic performance monitoring, provide transportation professionals with the ability to gather accurate data and evaluate projects and programs objectively. Moreover, the information helps commuters to plan their trips, especially on roads that experience high variability in traffic flow.

From the first volunteer-led Better Naito pilot, PBOT has committed to gathering, analyzing, and being transparent with traffic data on Naito.

Critical performance metrics related to Better Naito are: *Travel Times, Volumes, Mode-Splits, and Quality of Service.*



TRAVEL TIMES

Travel time is an important measure of traffic impacts along a defined segment. BlueMAC devices were installed on signal poles at SW Clay St, SW Salmon St, SW Stark St, and NW Davis St to evaluate the impact of Better Naito on motor vehicles traveling northbound from SW Clay St to SW Stark St on weekdays.

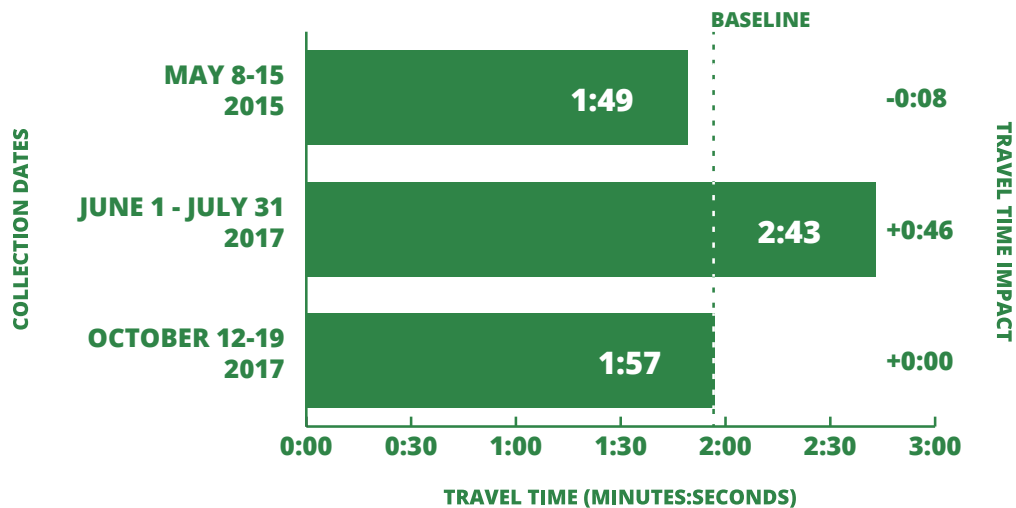


BlueMAC devices use Bluetooth technology to allow for anonymous travel time monitoring, by matching the Media Access Control (MAC) addresses of Bluetooth devices (cell phones, GPS navigation devices, etc.) without obtaining or recording any personal

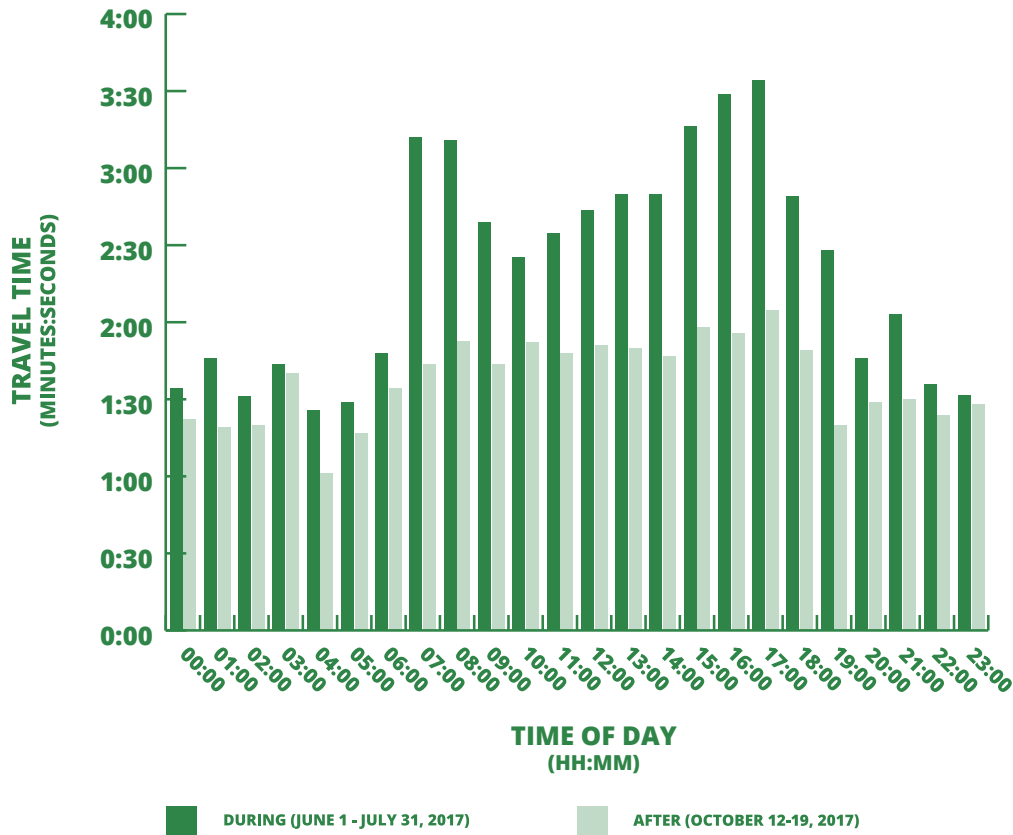
information that may be associated with the user of the Bluetooth device.

BlueMAC devices measured northbound travel times before, during, and after Better Naito to provide a comprehensive evaluation of the traffic impacts.

AVERAGE DAILY TRAVEL TIME FROM SW CLAY ST TO SW STARK ST (NORTHBOUND, WEEKDAYS, 07:00-09:00 & 16:00-18:00)



**AVERAGE CORRIDOR TRAVEL TIME, DURING & AFTER
BETTER NAITO 2017, FROM SW CLAY ST TO SW STARK ST
(NORTHBOUND, WEEKDAYS)**



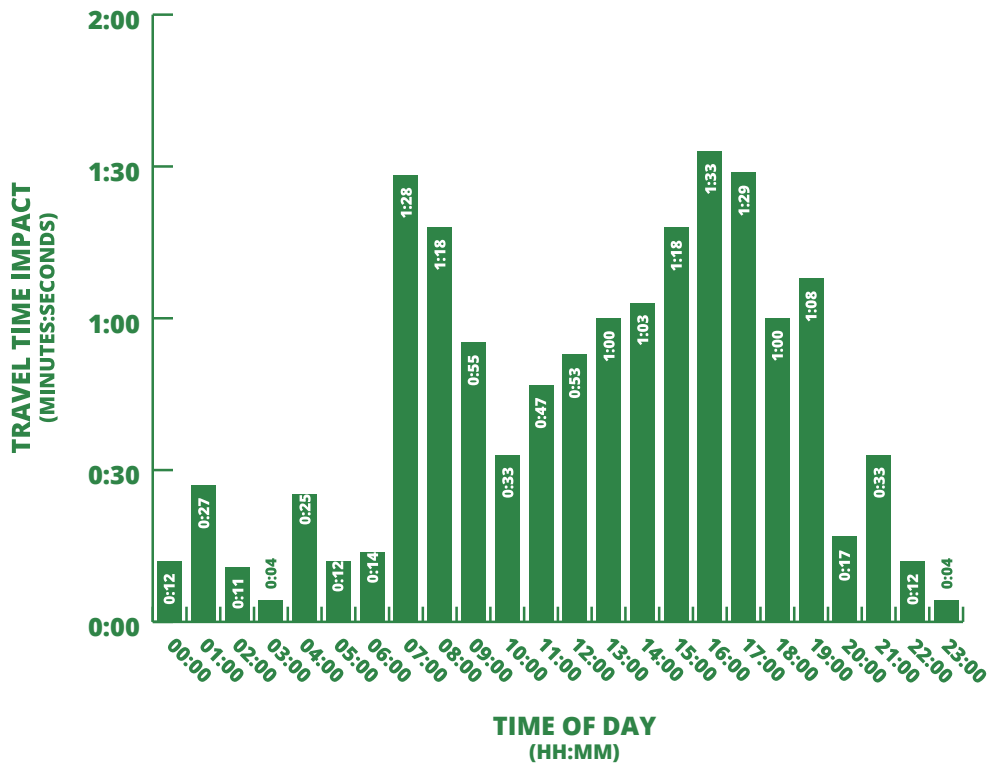
Based on comparative data from during and after (baseline) Better Naito 2017, the average daily traffic impact was +0:46 of travel time. During peak travel hours (7:00 AM to 7:00 PM), the average traffic impact was +1:07.

The most significant traffic impacts were during peak commuting hours +1:28 of travel time during the morning peak (7:00 AM) and +1:33 during the afternoon peak (4:00 PM).

Off peak travel hours saw minimal traffic impacts, ranging from of +0:04 at 3:00 up to +0:33 at 9:00 PM.

Furthermore, due to the temporary nature of Better Naito, the signal timing in the corridor could not be adjusted to improve traffic flow. However, in a permanent version, traffic impacts will be mitigated by including signal timing updates as part of the project.

**AVERAGE CORRIDOR TRAFFIC IMPACTS, DURING
BETTER NAITO 2017, FROM SW CLAY ST TO SW STARK ST
(NORTHBOUND, WEEKDAYS)**



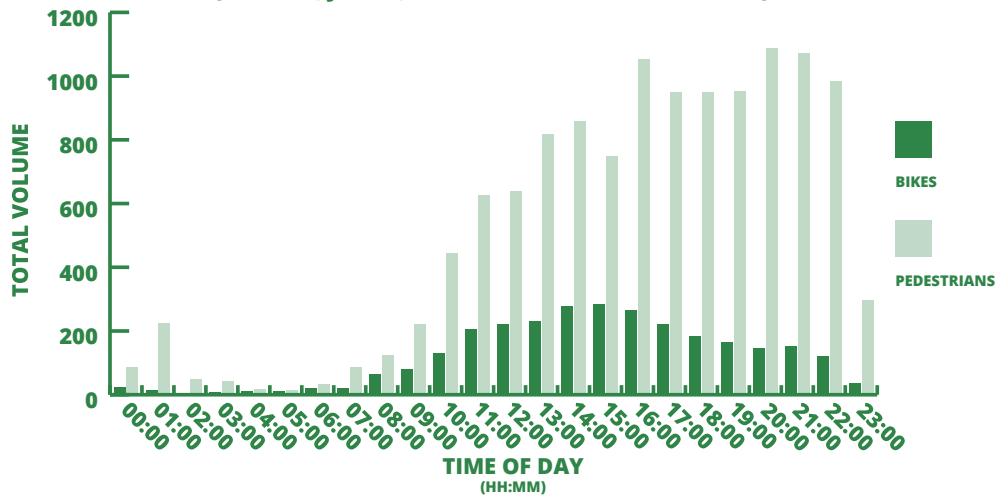
In addition to Naito Parkway, traffic impacts were monitored on adjacent and nearby corridors to determine any spillover effects from Better Naito. No significant impacts were observed.

VOLUMES

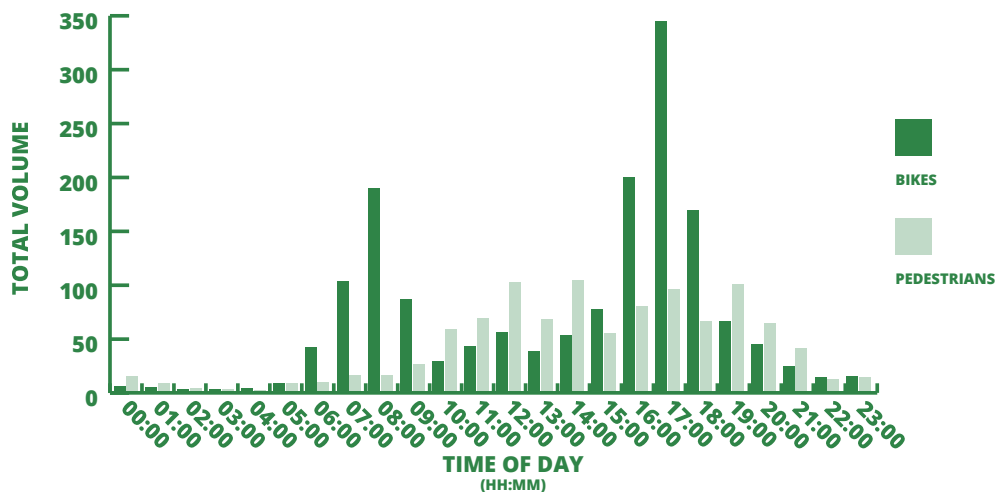
Better Naito began as a pilot project to address the increase in cyclists and pedestrians traveling to and from Waterfront Park during the summer season. Since its inception, the total volumes of cyclists and pedestrians have been recorded to ensure that the new infrastructure is able to provide an acceptable level of service for the increased demand from people biking and walking. By using multiple systems, including ground sensors (pneumatic tubes), manual counts, and video counts, daily and total volumes by travel mode were measured.

Cameras were installed at SW Salmon St and used to capture different conditions: an event day and a non-event day.

BIKE AND PEDESTRIAN VOLUMES BY HOUR
(SUNDAY, JULY 3, 2017--WATERFRONT BLUES FEST)

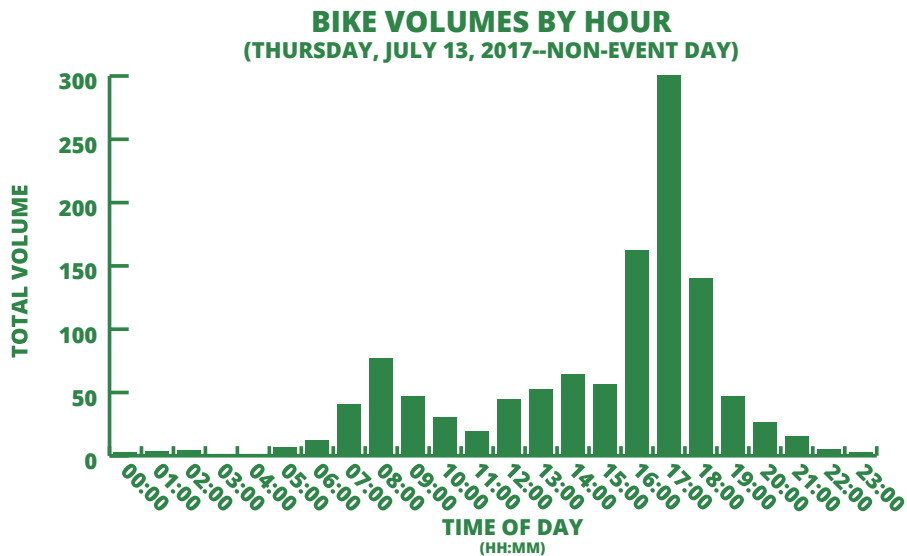


BIKE AND PEDESTRIAN VOLUMES BY HOUR
(THURSDAY, JULY 13, 2017--NON-EVENT DAY)



The recording from July 3, 2017, during the Waterfront Blues Fest, showed 2,896 cyclists and 12,373 pedestrians traveling on Better Naito. Conversely, on July 13, 2017, a non-event day, 1,598 cyclists and 1,013 pedestrians used Better Naito.

In addition to the cameras, pneumatic tubes were placed across SW Naito Parkway, north of SW Taylor St, on July 13, 2017 to provide a secondary count of the cyclists on Better Naito. The tubes counted 1,131 cyclists.



Finally, a third system used manual counts by trained observers from various sites along Better Naito to extrapolate daily totals. Data collection teams were deployed three times in August 2017: on the 9th (4:00 PM to 6:00 PM), 16th (4:00 PM to 6:00 PM), and 30th (7:00 AM to 9:00 AM).

The first count was positioned at the intersection of SW Ankeny Ave (Site 255) and counted 3,195 cyclists.

The second count was positioned at the intersection of SW Salmon St (Site 300) and counted 4,145 cyclists.

The third count was positioned under the Morrison Bridge (Site 215) and counted 2,555 cyclists.

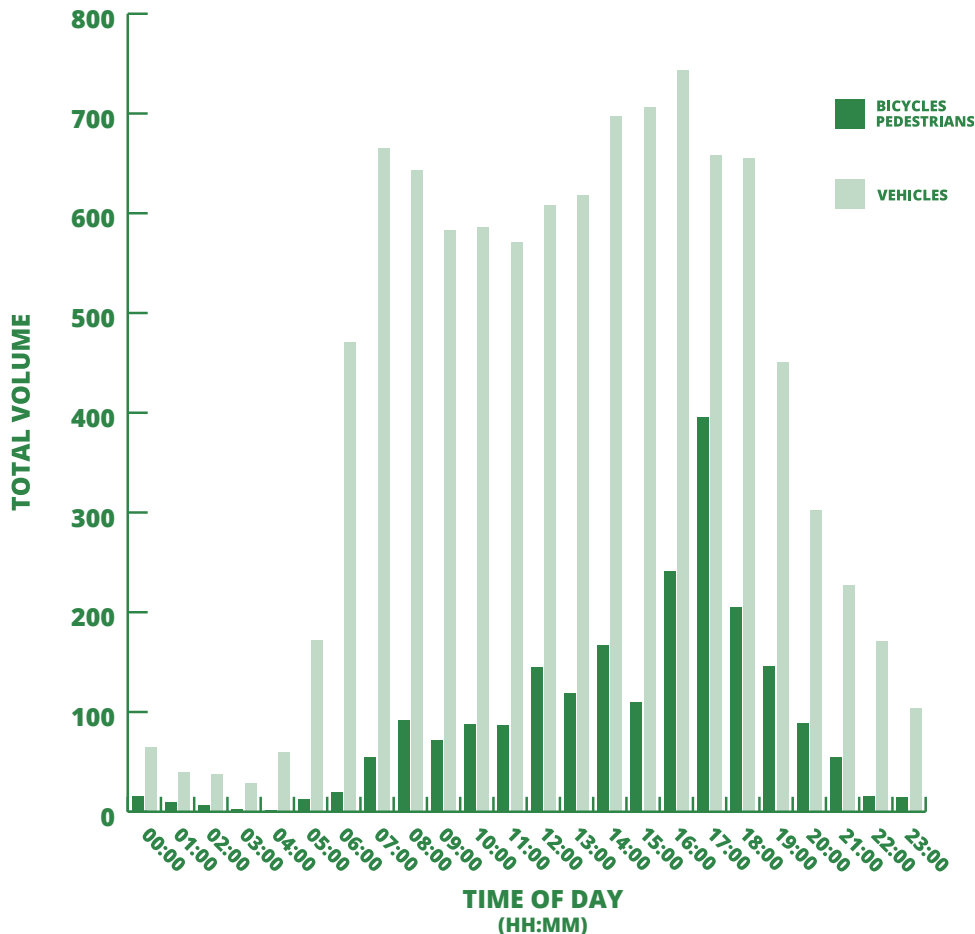
By averaging the cyclist counts from all the different systems, the average daily bike volume on Better Naito was 2,587 one-way trips, and the total volume for the season was 393,173 one-way trips by cyclists.

MODE-SPLIT

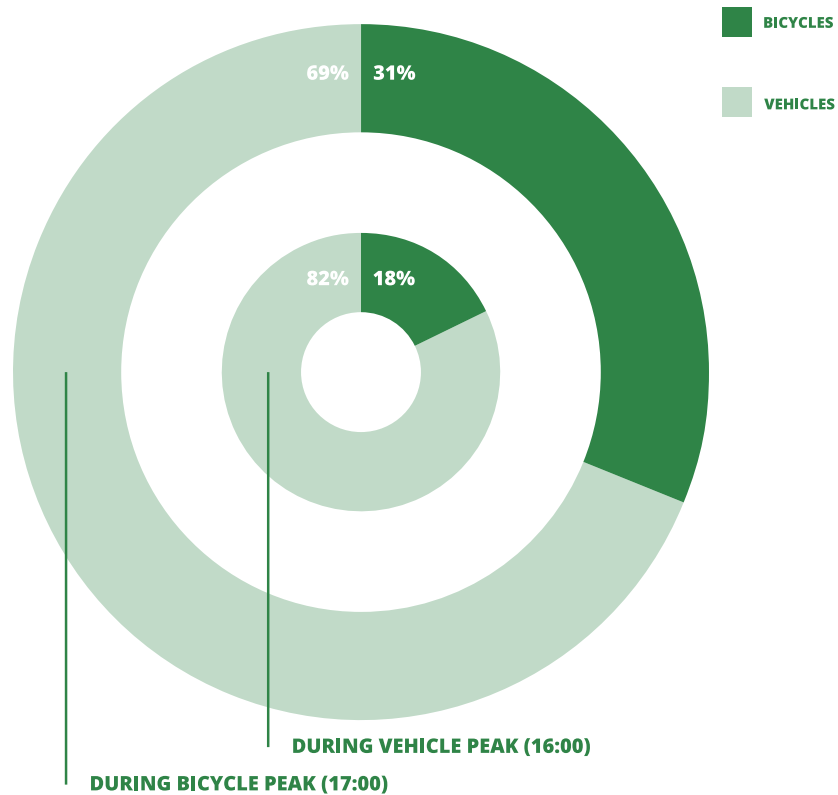
Modal share information provides comparative data to transportation professionals by breaking down the percentage of total trips within a defined geographic or social boundary by type or mode. In the case of Better Naito, one of the primary goals was to promote modal shift towards more sustainable modes to minimize the environmental and traffic impacts from an increased volume of total commuters traveling along and to Waterfront Park and summer events.

Pneumatic tubes were installed at the intersection of SW Naito Parkway and SW Taylor St to capture the mode-split between bicycles and vehicles traveling on the northbound travel lanes of NW/SW Naito Parkway.

**TOTAL VOLUME BY HOUR, VEHICLES & BICYCLES/PEDESTRIANS
NORTHBOUND NW/SW NAITO PARKWAY
(THURSDAY, JULY 13, 2017--NON-EVENT DAY)**



**MODE-SPLIT, VEHICLES & BICYCLES
NORTHBOUND NW/SW NAITO PARKWAY
(THURSDAY, JULY 13, 2017--NON-EVENT DAY)**



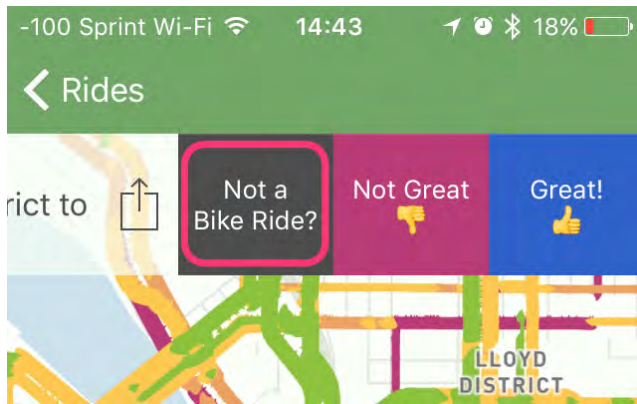
According to the volume data, bicycles traveling on Better Naito accounted for almost a third (31%) of the total traffic volume on the northbound travel lanes on SW Naito Parkway during traditional afternoon peak hours (5:00 PM). Our data shows vehicle afternoon peak hours by volume were slightly earlier on Naito than average, hitting at 4:00 PM.

Total daily traffic volume on the northbound travel lanes on SW Naito Parkway were 1131 (10%) and 9839 (90%) for bicycles and automobiles, respectively.

* It is important to note that Better Naito, while occupying a northbound travel lane, is designed to support both northbound and southbound cyclists and pedestrians.

QUALITY OF SERVICE

Quality of service is a metric of user satisfaction, which provides transportation professionals with a better understanding of people’s experiences of transportation infrastructure. User satisfaction metrics can be a powerful tool to improve current and future transportation planning, policy, and engineering processes. Moreover, high ratings reflect public interest in a project and, subsequently, provide validation.

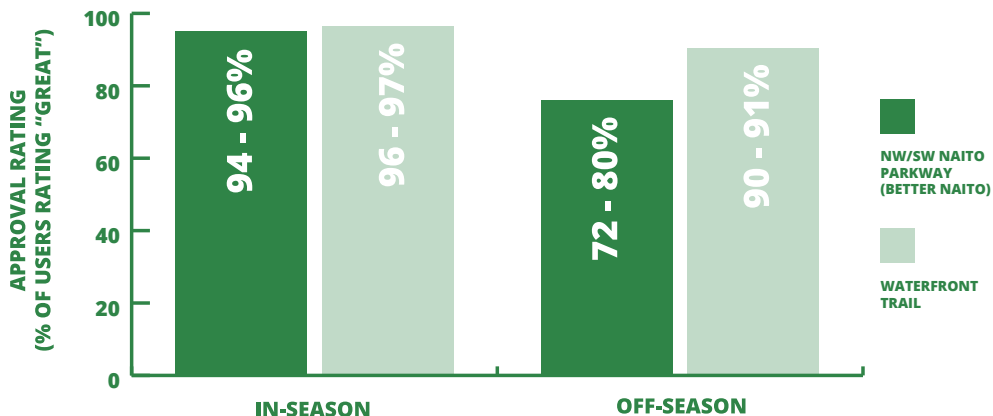


Ride Report is a free mobile app that provides users with the opportunity to rate segments of their trip, including options for multiple modes, as “Great” or “Not Great.” The data is then aggregated and analyzed to

provide an overall stress rating for the ride. The information helps both commuters to their plan trips and transportation professionals to evaluate their projects.

According to Ride Report data, Better Naito 2017 was rated as “Great” by 94-96% of users when it was installed. During the off-season, the same segment of NW/SW Naito Parkway received a significantly lower approval rating—only rated “Great” by 72-80% of users.

FACILITY APPROVAL RATING BY USER EXPERIENCE
(RIDE REPORT RATINGS FOR BIKE RIDES)

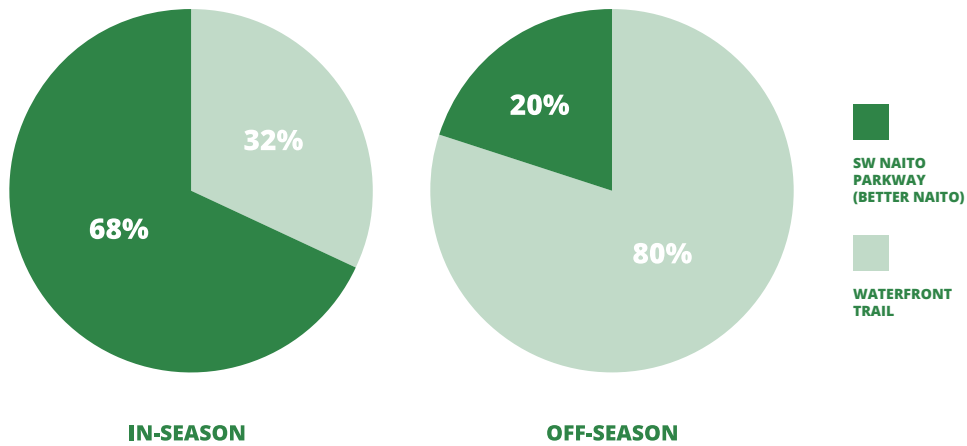


These ratings are consistent with the high volume of cyclists on the pedestrian trail in Waterfront Park during the off-season. Conversely, during the Better Naito season, more cyclists prefer to use Naito.

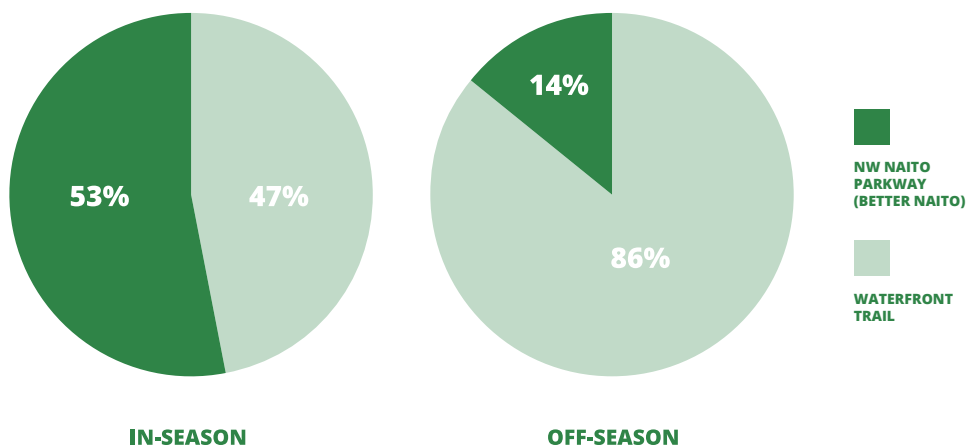
Specifically, on the segment south of SW Morrison St (SW Naito Parkway), Ride Report shows that more than twice as many cyclists use Better Naito than the Waterfront Trail—a 340% increase in facility preference. Similarly, south of NW Couch St, facility preference for NW Naito Parkway increases by 380% during Better Naito.

FACILITY PREFERENCE BY BIKE VOLUMES (RIDE REPORT)

SW NAITO PARKWAY, SOUTH OF SW MORRISON ST



NW NAITO PARKWAY, SOUTH OF NW COUCH ST



RELATED PROJECTS

Better Naito is just one of many transportation projects focused on improving pedestrian and bicycle infrastructure around the city. Despite its seasonal implementation, Better Naito often interacts with more permanent improvements along NW/SW Naito Parkway. During Better Naito 2017, the following projects were completed near the site:

Fixing Our Streets: New Signal Heads at NW Davis St

A new signal was installed at the intersection of NW Davis St and NW Naito Parkway to reduce conflicts between right turning vehicles and northbound cyclists. The signal creates a protected phase for cyclists heading north onto the NW Naito Cycle Track, and a separate right turn phase for automobiles turning onto the Steel Bridge. Ultimately, the signals make multi-modal traffic operations more predictable and safe at this location.



Bike Ramp at NW Couch St to NW Davis St

A bike ramp was installed at the northern terminus of Better Naito at NW Couch St leading to the new signal at NW Davis St. The bike ramp relieves sidewalk congestion, pedestrian-cyclist conflicts, and provides a more intuitive connection to the Steel Bridge. At the southern end, a larger bicycle box and wider crosswalk at NW Couch St accommodates cyclists and pedestrians crossing Naito.

Fixing Our Streets: Pedestrian Signal at SW Main St

A pedestrian signal was installed at the intersection of SW Main St and SW Naito Parkway to create a safer pedestrian connection

from downtown to Waterfront Park. The signal provides pedestrians and cyclists with an exclusive phase to cross a busy street and helps traffic operations on SW Naito Parkway.

Pedestrian Crossing at NW Everett St (with ODOT)

A new ADA-compliant ramp was built at the SW corner of the NW Everett St and NW Naito Parkway intersection. In addition, new striping and signs will improve the visibility and safety of pedestrians crossing OR-99W Pacific Highway (Steel Bridge vehicular on-ramp) to and from the Waterfront Trail.

FUTURE PROJECTS

Local Improvement Districts: NW Front Avenue to NW Naito Parkway

Formed by City Council on March 15, 2017, the NW Front Avenue-Naito Parkway LID will improve NW Front Avenue from the north property line 2220 NW Front Avenue to NW 15th Avenue and NW Naito Parkway from NW 15th Avenue to NW 9th Avenue. Construction is anticipated in 2018.

Fixing Our Streets: SW Naito Parkway Repaving Project

The SW Naito Parkway Repaving Project will create a two-way separated off-street path between SW Harrison and SW Clay Street and incorporate an on-street, two-way bike facility between SW Clay St and SW Jefferson St. A full pedestrian signal at SW Jefferson St will provide a safer connection from downtown to Waterfront Park. A new traffic signal on the Hawthorne Bridge will improve traffic operations for vehicles approaching from SW Naito Parkway.



LESSONS LEARNED

Better Naito helped to develop the city's ability to respond to and work with the community. Although Better Naito has been implemented since 2015 by Better Block PDX, Better Naito 2017 is the first round of the project as a city-led effort. The city council approved a 5-year seasonal implementation plan to provide an opportunity for transportation officials to collect and analyze traffic data to evaluate the impact of Better Naito over time. These findings will continue to be released to the public through updates to this report.

Each year, the scope and depth of data collection will be expanded to establish a more comprehensive understanding of traffic performance and user experiences on Naito Parkway. New techniques and methods may be employed as technology evolves.



LOOKING FORWARD

The road to Better Naito 2017 was paved with tireless advocacy and hardwork by Better Block PDX and a team of local students passionate about creating better public spaces in Portland. In many ways, Better Naito echoes the same values and vision that led to the establishment of Waterfront Park.

In true grassroots fashion, Better Naito serves as a testament to the power of an engaged community to improve its conditions. These ideals continue to influence other bold projects and initiatives in our city, such as “Portland in the Streets” and BIKETOWN. Looking forward we hope to continue to develop innovative strategies and policies to create a better transportation system that works for everyone as well as to inspire others beyond our city limits.

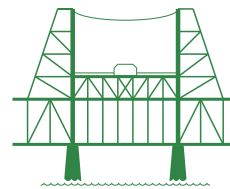
What does the future hold for Better Naito? PBOT’s Central City in Motion project is in the process of holistically evaluating Central City streets for new low-stress bikeways, prioritized transit routes, and pedestrian safety improvements. NW/SW Naito Parkway is one of the corridors under consideration for permanent enhanced pedestrian and biking improvements, and we anticipate the Central City in Motion project will have a recommendation for Naito in its final report to City Council.

Until then...***SEE YOU NEXT MAY!***



**READY
SET
GO!**

NEW! Bicycle signal at NW Davis St and NW Naito Pkwy



RIDE THE RAMP

A new connection to the Steel Bridge

ONE MINUTE



average traffic impact for vehicles traveling on Naito Parkway



07.03.2017

DAILY HIGH SCORE

15269

total cyclist (19%) and pedestrian (81%) use in one day



During peak afternoon traffic hours **1 IN 3** northbound commuters: **GO BY BIKE!**

#betternaito

@pbinfo



LOUD AND CLEAR

You talked, we listened. All 250+ times.



Better Naito provided better access to:

14 EVENTS

"A great enhancement to the waterfront."

Jeff Curtis, Rose Festival Foundation

ALL DAY,

ALL NIGHT

People use Better Naito **24 HOURS A DAY**



JUST DID IT...

62,935 TIMES.

total trips across Better Naito



95%

APPROVAL RATING according to Ride Report Users traveling on Better Naito

AND

2X More use than the Waterfront Trail

3.4X More likely to ride Naito Parkway during Better Naito

REVIEW

TOTAL BIKE TRIPS

393173

TOTAL MILES BIKED

275221

OR

11X AROUND THE WORLD



Walk & Roll This Way



NEW! Pedestrian signal at SW Main St and SW Naito Pkwy



SEE YOU NEXT MAY!



PBOT

PORTLAND BUREAU OF TRANSPORTATION
Commissioner: DAN SALTZMAN | Director: LEAH TREAT



FOR ADDITIONAL INFORMATION ABOUT BETTER
NAITO, PLEASE VISIT THE PROJECT WEBSITE:

WWW.BETTERNAITO.COM

IF YOU HAVE QUESTIONS, FEEDBACK, OR CONCERNS,
PLEASE EMAIL:

NAITOPARKWAY@PORTLANDOREGON.GOV

OR CALL:

(503) 823 - 4321

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