2019 Surveillance Impact Report

Acyclica

Seattle Department of Transportation

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Submitting Department Memo

To: Seattle City Council

From: Adiam Emery, Interim Transportation Operations Division Director, SDOT

Subject: Cover Memo – Surveillance Impact Report for the Acyclica system

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The Seattle Department of Transportation (SDOT) is transmitting the Surveillance Impact Report (SIR) about the Acyclica system for review and consideration within the Surveillance Ordinance process. The Acyclica system, along with the Traffic Cameras and License Plate Reader technology also under surveillance review, are highly critical transportation technologies for managing movement of people and goods during the Seattle Squeeze – the next five years when significant private and public construction projects will make it more difficult for people and goods to travel to and through Downtown Seattle. At no time with the Acyclica system does SDOT or our vendor have personally identifiably information about drivers or vehicle registration.

Purpose

SDOT began using the Acyclica system in 2014 to measure real-time vehicle travel times on city streets, primarily along Mercer St, in the downtown, and other congested arterial corridors. The small sensors (typically installed on SDOT street furniture) recognize Wi-Fi-enabled devices in vehicles (like smartphones) traveling between multiple sites. The sensors measure travel time from point A to point B without knowing any specific phone owners or their vehicle information–all data are securely encrypted, salted and hashed.

Benefits to the Public

The ability to gather traffic volumes across the city in real-time is a primary component of SDOT's transportation operations approach. The data is used in three ways:

- Incident detection and management: SDOT staff assigned to the Transportation Operations Center (TOC) monitor network travel times. The TOC consists of a planned and coordinated multi-disciplinary program and technology to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. If an anomaly in travel time is detected by TOC staff, they investigate further. Often, the source is an incident, and the TOC is the first to detect it. The data is used through the course of the incident response and recovery to advise motorists of alternative routes and travel times to reduce overall delays. Acyclica allows the TOC to work to reduce duration and impacts of traffic incidents and improve safety of motorists, crash victims, and emergency responders.

- Performance monitoring and operations improvements: As an example of Acyclica usage, the TOC used Acyclica and other traffic technology during the Viaduct Closure. SDOT uses travel time as the key indicator of our street system's performance allowing mitigation efforts to be focused on the appropriate intersections and corridors. Traffic signal timing improvements are also reliant on this data.

- Public information: The data gathered from the Acyclica sensors is used to provide real-time en route travel times to motorists by posting travel times on electronic message boards located across the city. The real-time travel times are also posted to SDOT's public travelers.gov website which is used by many to plan their daily travel. The information is an important tool to support delay reduction for travelers.

The Acyclica and other travel time measurement technologies, are the traffic information backbone of SDOT's response to the "Seattle Squeeze."

If SDOT was directed to remove these technologies, the data SDOT receives would be incredibly difficult to replicate. No other real-time data sources for arterial travel times are as accurate as those gathered via these technologies. SDOT would not be able to provide real-time travel times to the public, as they would not be sufficiently reliable. TOC incident detection and management operations would suffer without this data, and performance monitoring would not reflect actual operations. In terms of performance monitoring and signal operations improvements, this data enables SDOT to understand operations throughout the day. In the past, that data was collected by agencies by conducting "floating-car studies", which are conducted only during short time periods – not continuously. Using this technique, a team of City personnel would use fleet vehicles to regularly drive those same routes while recording their travel times, and subsequently manually enter that data into a spreadsheet or database. This would be a significant additional need for resources, in addition to a substantial downgrade of data time-of-day coverage, accuracy and timeliness.

Privacy and Civil Liberties Considerations

In 2015 after testing Acyclica, SDOT hired Coalfire System to independently audit Acyclica's security practices. The report stated:

> Coalfire was able to confirm the operation effectiveness of Acyclica's device and systems design such that there is no PII retained in any data repository, nor is the non PII MAC address ever presented to customer/clients in an unencrypted, unhashed format."

Furthermore, SDOT has strong, effective personnel rules for Transportation Operations Center staff and they were reviewed to ensure alignment with the City's Privacy/Surveillance Program.

2020 Updates

Several provisions in this SIR have been updated after its initial publication in 2019. In the interest of transparency, the original SIR documents policy and information as it stood at the time of completion of the SIR (including public engagement and Working Group review). New or updated information is placed next to the original references and will be indicated underneath the section where they originally appeared.

Surveillance Impact Report ("SIR") overview

About the Surveillance Ordinance

The Seattle City Council passed Ordinance 125376, also referred to as the "Surveillance Ordinance," on September 1, 2017. SMC 14.18.020.b.1 charges the City's executive with developing a process to identify surveillance technologies subject to the ordinance. Seattle it, on behalf of the executive, developed and implemented a process through which a privacy and surveillance review is completed prior to the acquisition of new technologies. This requirement, and the criteria used in the review process, are documented in Seattle it policy pr-02, the "surveillance policy".
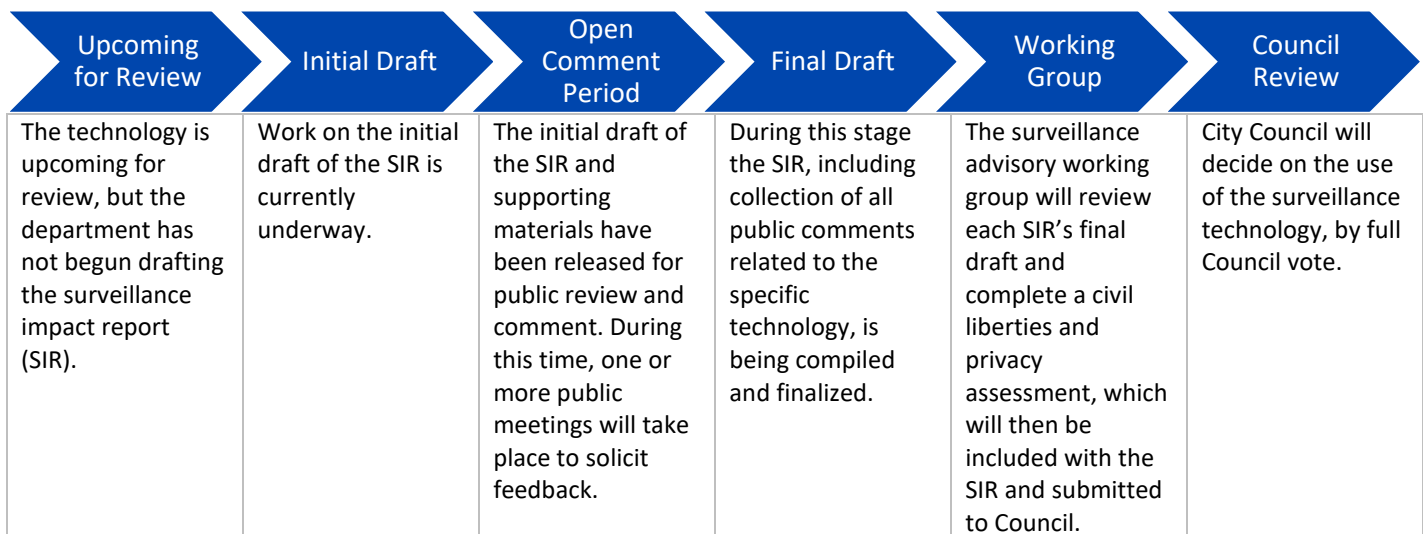
How this Document is Completed

This document is completed by the requesting department staff, support and coordinated by the Seattle information technology department ("Seattle it"). As Seattle it and department staff complete the document, they should keep the following in mind.

1. Responses to questions should be in the text or check boxes only; all other information (questions, descriptions, etc.) Should **not** be edited by the department staff completing this document.

2. All content in this report will be available externally to the public. With this in mind, avoid using acronyms, slang, or other terms which may not be well-known to external audiences. Additionally, responses should be written using principally non-technical language to ensure they are accessible to audiences unfamiliar with the topic.

Surveillance Ordinance Review Process

The following is a high-level outline of the complete SIR review process.

Upcoming for Review	Initial Draft	Open Comment Period	Final Draft	Working Group	Council Review
The technology is upcoming for review, but the department has not begun drafting the surveillance impact report (SIR).	Work on the initial draft of the SIR is currently underway.	The initial draft of the SIR and supporting materials have been released for public review and comment. During this time, one or more public meetings will take place to solicit feedback.	During this stage the SIR, including collection of all public comments related to the specific technology, is being compiled and finalized.	The surveillance advisory working group will review each SIR's final draft and complete a civil liberties and privacy assessment, which will then be included with the SIR and submitted to Council.	City Council will decide on the use of the surveillance technology, by full Council vote.

Privacy Impact Assessment

Purpose

A Privacy Impact Assessment ("PIA") is a method for collecting and documenting detailed information collected in order to conduct an in-depth privacy review of a program or project. A PIA asks questions about the collection, use, sharing, security and access controls for data that is gathered using a technology or program. It also requests information about policies, training and documentation that govern use of the technology. The PIA responses are used to determine privacy risks associated with a project and mitigations that may reduce some or all of those risks. In the interests of transparency about data collection and management, the City of Seattle has committed to publishing all PIAs on an outward facing website for public access.

When is a Privacy Impact Assessment Required?

A PIA may be required in two circumstances.
1. When a project, technology, or other review has been flagged as having a high privacy risk.
2. When a technology is required to complete the surveillance impact report process. This is one deliverable that comprises the report.

1.0 Abstract

1.1 Please provide a brief description (one paragraph) of the purpose and proposed use of the project/technology.

> Acyclica is a provider of high resolution, real-time traffic congestion information. Acyclica's suite of traffic analytics software and sensor devices is currently being used by over 50 (**140**) agencies both domestic and international to help to monitor and improve traffic congestion. Acyclica works with cities, municipalities, and transportation departments to aggregate and analyze data to bridge gaps in traditional traffic data services.

1.2 Explain the reason the project/technology is being created or updated and why the PIA is required.

> Acyclica meets inclusion criteria 3.2.1.3 from the PR-02 Surveillance Policy which states, "The technology collects data that is personally identifiable even if the data is obscured, de-identified, or anonymized after collection."

2.0 Project / Technology Overview

Provide an overview of the project or technology. The overview gives the context and background necessary to understand the purpose, mission and justification for the project / technology proposed

2.1 Describe the benefits of the project/technology.

SDOT has ~~301~~ **(435)** Acyclica units installed throughout the City. Based on the data captured, SDOT has information that can be provided to travelers and traffic engineers. This information includes calculated average speeds for different monitored roadway segments, and average progress time along different monitored roadway segments, representative of travel time and delays. This data allows traffic engineers to correct traffic signal timing and provide information to travelers about expected delays.

Seattle Acyclica
Locations.xlsx

In addition, the data generated by the use of Acyclica allows SDOT to meet records and reporting requirements under the authority of SMC 11.16.200, requiring SDOT to keep records of traffic volumes, as well as SMC 11.16.220 requiring an annual report on traffic.

2.2 Provide any data or research demonstrating anticipated benefits.

SDOT's preliminary deployment of Acyclica technology was along the Mercer Street. This corridor provides access to I-5, Seattle Center, and our growing technology business hub in South Lake Union. As one of the primary options for moving east and west across our City, Mercer Street was typically highly congested during the morning and evening commute. By using travel time data provided by Acyclica, we were able to accurately gauge how long it was taking people to make their way through the congestion. In 2017, we launched a new adaptive traffic signal system to help ease the backups. Prior to deployment, wait times during the height of work-week rush hour backups (between 6 and 7 PM) were approximately 34 minutes. Today, during that exact same time frame, the wait is down to 17 minutes. The information provided by Acyclica was incredibly valuable during this process, and we plan for it to continue informing our future data-driven decisions.

2.3 Describe the technology involved.

Acyclica technology collects encrypted media access control (MAC) address information and sends the data to the cloud using their RoadTrend Sensor. This sensor is a proprietary Linux-based device that is discreetly installed inside of traffic control cabinets for SDOT. The devices are Ethernet connected and have a Wi-Fi adapter capturing the MAC addresses of all devices within its range. Using the detection of MAC addresses, Acyclica identifies and differentiates vehicle movement as it approaches, stops and leaves an intersection. When Wi-Fi enabled device comes within range, the sensor generates a one-way hash code from the detected device's MAC address (using a SHA-256 algorithm). Only the hash codes are transmitted to their cloud server, and there is no way to reverse this process and access addresses of the original devices. From the aggregated data, Acyclica can extract and provide actionable traffic related information to SDOT.

Updated Information

Acyclica technology collects, encrypts an irreversibly obfuscates media access control (MAC) address information and sends the data to the cloud using their RoadTrend Sensor. This sensor is a proprietary Linux based device that is discreetly installed inside of traffic control cabinets for SDOT. The devices are Ethernet connected and have a Wi-Fi adapter capturing the MAC addresses of all Wi-Fi enable devices within its range which are not connected to existing networks. Using the detection of MAC addresses, Acyclica identifies and differentiates vehicle movement as it approaches, stops and leaves an intersection. When Wi-Fi enabled device come within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way to reverse the encryption and obfuscation processes to access MAC addresses of the original devices. From the aggregated data, Acyclica can extract and provide actionable traffic related information to SDOT.

2.4 Describe how the project or use of technology relates to the department's mission.

This technology is part of the Mayor's Smart Cities initiative and creates new opportunities to use data to help reduce traffic congestion. SDOT's mission is to deliver a high-quality transportation system for Seattle. In our quickly growing city, moving people safely and reliably is an ever-increasing challenge. Technology can help us make more efficient use of our streets. Through Intelligent Transportation Systems (ITS), we can use communications technologies on the street and via automated traffic systems, to improve safety and mobility for all travelers. Travel time measurement gives SDOT the most important traffic information for indicating a road's mobility performance, and these measurements are the basis for decisions which improve the traffic operations of Seattle's road networks.

2.5 Who will be involved with the deployment and use of the project / technology?

Deployment and maintenance of Acyclica devices is provided by Western Systems, a transportation solutions vendor with which the City has had a long relationship. SDOT Signal Electricians are also on site for every deployment to ensure the work is completed properly per standard practice. The data is primarily used by both our Traffic Signal Timing Engineers and Transportation Operations Center (TOC) staff. Timing Engineers work with modeling software to optimize traffic movements, and the travel time data provided by Acyclica informs the effectiveness of their actions. The TOC provides the data to commuters in real-time on both large roadside reader boards, and on the Traveler Information Map web application.

3.0 Use Governance

Provide an outline of any rules that will govern the use of the project / technology. Please note: non-City entities contracting with the City are bound by restrictions specified in the surveillance ordinance and privacy principles and must provide written procedures for how the entity will comply with any restrictions identified.

3.1 Describe the processes that are required prior to each use, or access to/ of the project / technology, such as a notification, or check-in, check-out of equipment.

> The City of Seattle is purchasing data as a service (terms are attached below). Past procurements have been funded by individual projects based on their performance metrics needs. Additionally, all new traffic signal cabinets will include Acyclica units as part of their standard build.
>
> Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data. The devices are then monitored for malfunction, and issues are resolved through cooperation between the two entities. Acyclica's aggregated data is available from their cloud server through a secure web portal. Only specified personnel have access to that site. The data is also available for consumption using a web application programming interface (API), which is what the TOC leverages to provide the information to the public.
>
> 📄 PDF
> Western Systems
> Terms

3.2 List the legal standards or conditions, if any, that must be met before the project / technology is used.

> There are no legal standards dictating the deployment and use of Acyclica technology.

3.3 Describe the policies and training required of all personnel operating the project / technology, and who has access to ensure compliance with use and management policies.

> Western Systems received on-site training from Acyclica on how to properly install and monitor the devices. Acyclica also works closely with the appropriate SDOT staff to ensure that they remain fully informed about all available system features. Acyclica also provides a manual for system administrators detailing how to configure sensors and routes, run analytics, create alerts, and integrate with the API:
>
> 📄 PDF
> AcyclicaUserGuide
>
> Additonally, all SDOT employees are required to take annual Privacy and Information Security Awareness training as provided by Seattle IT.

4.0 Data Collection and Use

4.1 Provide details about what information is being collected from sources other than an individual, including other IT systems, systems of record, commercial data aggregators, publicly available data and/or other City departments.

Acyclica does not collect data from sources other than encrypted MAC addresses from Wi-Fi enabled devices.

4.2 What measures are in place to minimize inadvertent or improper collection of data?

A MAC address uniquely identifies a device connected to a network. MAC addresses are usually assigned by a manufacturer, and the information is hard-coded to the device and stored in its hardware. If device ownership changes, the device MAC address remains unchanged. Within the product and services provided by Acyclica, the applicable device is a mobile device. The intended design of the sensor devices limits the collection of MAC address data based upon the signal strength that is broadcasted to the Wi-Fi antenna within the designated traffic cabinets range (500-700 feet). This means that there is a focused effort to only capture data within the predetermined range which will provide the most relevant data.

When Wi-Fi enabled device comes within range, the sensor generates a one-way hash code from the detected device's MAC address (using a SHA-256 algorithm). Only the hash codes are transmitted to their cloud server, and there is no way to reverse this process and access addresses of the original devices. From the aggregated data, Acyclica can extract and provide actionable traffic related information to SDOT.*

Updated Information

*When Wi-Fi enabled device comes within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way to reverse the encryption and obfuscation processes to access MAC addresses of the original devices. From the aggregated data, Acyclica can extract and provide actionable traffic related information to SDOT

4.3 How and when will the project / technology be deployed or used? By whom? Who will determine when the project / technology is deployed and used?

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

*When Wi-Fi enabled device comes within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way | Surveillance Impact Report | ACYCLICA |page 11

SDOT has deployed Acyclica units on many of Seattle's primary road arterials since 2014, with the goal of having complete coverage on those identified streets. The attachment below identifies locations of all currently deployed Acyclica units in Seattle. The TOC/ITS Program Manager has final decision on where they are installed.

Past procurements have been funded by individual projects based on their performance metrics needs. Additionally, all new traffic signal cabinets will include Acyclica units as part of their standard build.

Seattle Acyclica Locations.xlsx

4.4 How often will the technology be in operation?

The technology collects data 24 hours a day, seven days a week, 365 days a year.

4.5 What is the permanence of the installation? Is it installed permanently, or temporarily?

Acyclica devices are installed in traffic cabinets only accessible by qualified personnel. The City of Seattle is purchasing data as a service through Western Systems. Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data. The devices can be moved from one location to another based on SDOT's needs.

4.6 Is a physical object collecting data or images visible to the public? What are the markings to indicate that it is in use? What signage is used to determine department ownership and contact information?

Although the RoadTrend sensor is installed inside of a traffic cabinet, communication is facilitated by affixing a low-profile antenna to its roof. The antenna is weather proof and adhered to the cabinet with sealant. The antenna is connected to the RoadTrend sensor by a wire that goes through a small hole that was drilled through the roof when the device was installed. No other indications are present distinguishing it from any other of our 1000+ roadside cabinets.

4.7 How will data that is collected be accessed and by whom?

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

*When Wi-Fi enabled device comes within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way | Surveillance Impact Report | ACYCLICA |page 12

All aggregated traffic data will be accessed by SDOT personnel through Acyclica's web portal, or by applications leveraging the API. Users include:

1. Intelligent Transportation System Engineers
2. Transportation Operations Center Staff
3. Traffic Signal Timing Engineers
4. Traffic Operations Division Leadership

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

*When Wi-Fi enabled device comes within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way | Surveillance Impact Report | ACYCLICA |page 13

4.8 If operated or used by another entity on behalf of the City, provide details about access, and applicable protocols.

Deployment and maintenance of Acyclica devices is provided by Western Systems, a transportation solutions vendor with which the City has had a long relationship. Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data. The devices are then monitored for malfunction, and issues are resolved through cooperation between the two entities.

Western Systems Terms

No user (including the vendor administrator) can access personally identifiable information from the web portal as it only provides the corresponding results of data aggregation. SDOT may provide access to the hashed data to consultants who are performing work on our behalf. This is accomplished by an SDOT administrator creating a user on Acyclica's front-end web application and providing those credentials to the consultant. Once the contract has concluded that user access will be eliminated. Types of accessible information include:
- Route Travel Times by Segment
- Speed
- Congestion Index
- Route Delay
- Progression Diagram
- Route Speed by Segment
- Timing Plan Analysis
- Day of Week Analysis
- Weekly Analysis
- Timing Run
- Delay by Phase
- Delay by Approach
- Idle Emissions
- Purdue Coordination Diagram

4.9 What are acceptable reasons for access to the equipment and/or data collected?

Acceptable reasons for access to the equipment include device installation or issue troubleshooting. Access to the data is permitted to perform traffic analysis, conduct research, create reports, or connecting to the API with software applications.

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION   *When Wi-Fi enabled device comes within range, the sensor encrypts the detected device's MAC address using industry standard and best practice TLS 1.2 encryption algorithms. Only the encrypted data is transmitted to their cloud server, and there is no way | Surveillance Impact Report | ACYCLICA |page 14

4.10 What safeguards are in place, for protecting data from unauthorized access (encryption, access control mechanisms, etc.) And to provide an audit trail (viewer logging, modification logging, etc.)?

Acyclica has created proprietary code that incorporates encryption technology using industry standard algorithm and cipher strengths, as well as inclusion of the use of a cryptographic hash function with a generated salt value.

A cryptographic hash function is a way to easily validate that a string of data corresponds to a specific hash value. If the original data string is unknown, but the stored hash value is known, by design, the cryptographic hash function makes it challenging to recreate the original data string. Utilization of hash function is intended to assure the integrity of data in transmission. In cryptography, a salt is a random piece of data that is used, in addition to a string of data, and in the creation of a hash value through use of a hash function. The primary function of salts is to prevent retro calculation of the hashed value if the hash function is known. Use of a salt precludes the effectiveness of using a list of possible pre-computed values since the salt is randomly generated.

With Acyclica's proprietary technology solutions, the salt rotates every 24 hours on the actual sensor device. The salt value is determined by timestamp which enables the hash to be dynamic. This encryption methodology is per industry standard protocols. Additionally, there is proprietary code that is running on the sensor device that performs the encryption function. The methodology of transmission to the cloud is a direct post to the back-end systems, versus an HTTPS transmission or broadcast over open, public networks which is considered less secure. *

Updated Information

* With Acyclica's proprietary technology solutions, the salt rotates every 24 hours leading to the inability to track devices over multiple days. The salt value is generated daily on-the-fly which enables the hash to be dynamic. This encryption methodology is per industry standard protocols. Additionally, there is proprietary code that is running on the sensor device that performs the encryption function. The methodology of transmission to the cloud is a direct post to the back-end systems utilizing TLS 1.2 encryption standard, versus a broadcast over open, public networks which is considered less secure.

5.0 Data Storage, Retention and Deletion

5.1 How will data be securely stored?

Acyclica uses of a pared down proprietary Linux installation with a specific embedded Computer Processing Unit (CPU) chosen for processing optimization. ~~Minimal~~ **(No persistent)** storage is available on this device to enable only intended functionality and to also limit data retained. Additionally, there are specific access controls set to ensure restricted logical access to the device. Acyclica also employs logical access controls to ensure minimally assigned access and privileges, on a need-to-know basis. Vulnerability of systems is managed with patch procedures and change management processes, and logs are captured and monitored for maximum security awareness of the state of the devices and systems.

5.2 How will the owner allow for departmental and other entities, to audit for compliance with legal deletion requirements?

Acyclica has built specific security language into their contracts to clearly delineate the responsibilities between Acyclica and the customer/client for security of data and associated requirements. The aggregated traffic data is owned by SDOT, and there is a 10 year internal deletion requirement per item#42 of the SDOT Public Retention Schedule & Destruction Authorization Schedule:

[PDF icon]
SDOT Records
Retention Schedule.

5.3 What measures will be used to destroy improperly collected data?

Acyclica hosts the aggregated traffic data on their servers, and the gathered data is encrypted to fully eliminate the possibility of identifying individuals or vehicles. In no event shall SDOT or Western Systems and its subcontractors make any use of the data gathered by the devices for any purpose that would identify the individuals or vehicles included in the data.

5.4 which specific departmental unit or individual is responsible for ensuring compliance with data retention requirements?

The SDOT Transportation Operations Center (TOC) departmental unit is responsible for ensuring compliance with data requirements.

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

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6.0 Data Sharing and Accuracy

6.1 Which entity or entities inside and external to the City will be data sharing partners?

> SDOT receives and shares summarized traffic information with a variety of internal stakeholders, as well as the motoring public. However, the underlying anonymized data used to create that information is unavailable to SDOT or any other partner.

6.2 Why is data sharing necessary?

> SDOT and data sharing partners have no access to the anonymized data used by Acyclica to create travel times and other information, but strictly the aggregated data related to traffic flow. The summarized traffic information that comes to SDOT and is shared with the public, is necessary to make traffic and route-planning decisions.

6.3 Are there any restrictions on non-City data use?

Yes ☐ No ☒

> **6.3.1 If you answered yes, provide a copy of the department's procedures and policies for ensuring compliance with these restrictions.**
>
> > The data provided by Acyclica is used for the purposes defined in the previous sections and for no other purposes.

6.4 How does the project/technology review and approve information sharing agreements, memorandums of understanding, new uses of the information, new access to the system by organizations within City of Seattle and outside agencies?

> This question is not applicable to this technology.

6.5 Explain how the project/technology checks the accuracy of the information collected. If accuracy is not checked, please explain why.

> If SDOT, in their sole discretion, determines that the analytics software is producing unacceptable travel time and delay metrics to such an extent that SDOT will not use the data for public information or their own analysis purposes, SDOT will notify Western Systems of the issue. Within 3 days, Western Systems must test the software and respond with a remediation plan and schedule to resolve the issue. If the issue is not resolved within the Contractor-stated time period, or if the issue lasts longer than 3 calendar months, SDOT will no longer pay for any portion of the system, and will notify Western Systems to remove the system, and the field devices, and the contract will be terminated.

6.6 Describe any procedures that allow individuals to access their information and correct inaccurate or erroneous information.

> The information provided through the Acyclica web portal and API is read-only, and we work directly with Acyclica if we have any questions about accuracy.

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7.0 Legal Obligations, Risks and Compliance

7.1 What specific legal authorities and/or agreements permit and define the collection of information by the project/technology?

> The City of Seattle is purchasing Acyclica data as a service. Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data.
>
> This information is collected under the authority of SMC 11.16.200, requiring SDOT to keep records of traffic volumes, as well as SMC 11.16.220 requiring an annual report on traffic.

7.2 Describe what privacy training is provided to users either generally or specifically relevant to the project/technology.

> Contractually, Acyclica guarantees that the data gathered is encrypted to fully eliminate the possibility of identifying individuals or vehicles. No user can access personally identifiable information from the web portal as it only provides aggregated data. Users are trained on how to use the web portal to pull reports relevant to their program or project. Applications of Acyclica technology include: signal timing & coordination, traffic network optimization, street parking congestion analysis, congestion mapping, route planning, work zone congestion enforcement, variable message signs, incident detection, emergency responder routing and route utilization.
>
> Additionally, all SDOT employees are required to take annual Privacy and Information Security Awareness training as provided by Seattle IT.

7.3 Given the specific data elements collected, describe the privacy risks identified and for each risk, explain how it was mitigated. Specific risks may be inherent in the sources or methods of collection, or the quality or quantity of information included.

> **Risk:** A specific individual's movements are tracked due to the implementation of this technology.
>
> **Mitigation:** The only way to connect a MAC address to the mobile device owner or user is to work with a mobile carrier to associate the MAC address to an active mobile phone number listed on mobile customer's account. Acyclica protects the data using encryption technology embedded within proprietary code that secures MAC address at the device prior to transmission to the backend infrastructure for analysis. Other methods of securing the data include specific design and configuration of the backend infrastructure components, as well as industry standard security practices for access controls and logging, monitoring and alerting.

7.4 Is there any aspect of the project/technology that might cause concern by giving the appearance to the public of privacy intrusion or misuse of personal information?

The aspect of the technology that might cause public concern is by implying that the City is tracking the movements of individuals.

8.0 Monitoring and Enforcement

8.1 Describe how the project/technology maintains a record of any disclosures outside of the department.

Public information requests are funneled to the appropriate staff member and tracked by SDOT administrative staff.

8.2 What auditing measures are in place to safeguard the information, and policies that pertain to them, as well as who has access to the audit data? Explain whether the project/technology conducts self-audits, third party audits or reviews.

On April 20th 2015, SDOT informed Acyclica about Seattle's privacy legislation. We asked that Acyclica obtain third party assurance from a licensed audit or security firm that the company's controls implemented to protect the privacy of individuals' data captured by their devices is maintained. This assessment was required to be performed in accordance with the AICPA AT-101 Attest engagement standard. Acyclica was instructed to consult with an audit firm of their choice to see if an existing audit standard is sufficient (e.g. SOC2 Privacy), or if a custom agreed-upon procedures assessment was necessary. We then requested a copy of the auditor's opinion and report, with the intention to make it public as part of our privacy assessment of the traffic management program.

PDF
Attest Engagement
Standard 101.pdf

In response, Acyclica hired Coalfire Systems, Inc. to perform a privacy audit per our recommendations. They submitted the finalized report titled, "Acyclica White Paper: RoadTrend does not Capture PII" on Decmber 18th, 2015. SDOT will submit that paper as part of the Acyclica Surveillance Impact Report.

PDF
Acyclica White
Paper_RoadTrend d

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Financial Information

Purpose

This section provides a description of the fiscal impact of the surveillance technology, as required by the surveillance ordinance.

1.0 Fiscal Impact

Provide a description of the fiscal impact of the project/technology by answering the questions below.

1.1 Current or potential sources of funding: initial acquisition costs.

Current ☒ potential ☐

Date of initial acquisition	Date of go live	Direct initial acquisition cost	Professional services for acquisition	Other acquisition costs	Initial acquisition funding source
8/2014	8/2014	$355,885	$0	$0	Next Generation ITS

Notes:

Initial investment included 58 units.

1.2 Current or potential sources of funding: on-going operating costs, including maintenance, licensing, personnel, legal/compliance use auditing, data retention and security costs.

Current ☒ potential ☐

Annual maintenance and licensing	Legal/compliance, audit, data retention and other security costs	Department overhead	IT overhead	Annual funding source
$482,800	$0	$0	$0	Next Generation ITS

Notes:

Service fee is $1,775/unit per year.

1.3 Cost savings potential through use of the technology

According to King 5 News, "Seattle drivers spent an average of 55 peak hours in 2017 stuck in congestion, finishing ninth in the United States… Seattle drivers paid $1,853 each in 2017 for that privilege of being stuck in the city's traffic congestion." Leveraging Acyclica's data allows SDOT to improve traffic conditions for all Seattle travelers, which provides a quantifiable cost impact for those who experience delay.

If SDOT wanted to emulate the data collection provided by Acyclica using traditional means, we would have to employ a team of personnel to drive Seattle's corridors 24x7x365 and report back on their travel time experiences. That data would then have to be entered into a database and managed by additional IT staff.

Pittman, Travis. "Seattle, Tacoma among worst traffic congestion in U.S., INRIX reports." KING, 6 Feb. 2018, www.king5.com/article/news/local/seattle-tacoma-among-worst-traffic-congestion-in-us-inrix-reports/281-515147593.

1.4 Current or potential sources of funding including subsidies or free products offered by vendors or governmental entities

This question is not applicable.

Expertise and References

Purpose

The following information is provided to ensure that Council has a group of experts to reference while reviewing the completed surveillance impact report ("SIR"). Any individuals or agencies referenced must be made aware ahead of publication that their information has been included. All materials must be available for Council to access or review, without requiring additional purchase or contract.

1.0 Other Government References

Please list any other government bodies that have implemented this technology and can speak to the implementation of this technology.

Agency, municipality, etc.	Primary contact	Description of current use
Boulder, CO	Mike Sweeney	Real-time and historical congestion monitoring
Henderson, NV	Alyssa Rodriguez	Signal timing analysis, connected vehicle

2.0 Academics, Consultants, and Other Experts

Please list any experts in the technology under consideration, or in the technical completion of the service or function the technology is responsible for.

Agency, municipality, etc.	Primary contact	Description of current use
Transpo Group	Bruce Haldors	Signal Timing and adaptive performance integration
University of Washington	Mark Hallenbeck	Transportation Data Collaborative

3.0 White Papers or Other Documents

Please list any authoritative publication, report or guide that is relevant to the use of this technology or this type of technology.

Title	Publication	Link
Florence Boulevard Traffic Analysis	Acyclica Report	[PDF] Florence Boulevard Traffic Analysis
Traffic Success: Greeley Colorado	Acyclica Report	[PDF] Traffic Success: Greeley Colorado

Racial Equity Toolkit ("RET") and Engagement for Public Comment Worksheet

Purpose

Departments submitting a SIR are required to complete an adapted version of the Racial Equity Toolkit ("RET") in order to:

- Provide a framework for the mindful completion of the SIR in a way that is sensitive to the historic exclusion of vulnerable and historically underrepresented communities. Particularly, to inform the public engagement efforts departments will complete as part of the surveillance impact report.
- Highlight and mitigate any impacts on racial equity from the adoption and the use of the technology.
- Highlight and mitigate any disparate impacts on individuals or vulnerable communities.
- Fulfill the public engagement requirements of the surveillance impact report.

Adaptation of the RET for Surveillance Impact Reports

The RET was adapted for the specific use by the Seattle Information Technology Departments' ("Seattle IT") Privacy Team, the Office of Civil Rights ("OCR"), and Change Team members from Seattle IT, Seattle City Light, Seattle Fire Department, Seattle Police Department, and Seattle Department of Transportation.

Racial Equity Toolkit Overview

The vision of the Seattle Race and Social Justice Initiative ("RSJI") is to eliminate racial inequity in the community. To do this requires ending individual racism, institutional racism and structural racism. The RET lays out a process and a set of questions to guide the development, implementation and evaluation of policies, initiatives, programs, and budget issues to address the impacts on racial equity.

1.0 Set Outcomes

1.1. Seattle City Council has defined the following inclusion criteria in the surveillance ordinance, and they serve as important touchstones for the risks departments are being asked to resolve and/or mitigate. Which of the following inclusion criteria apply to this technology?

☐ The technology disparately impacts disadvantaged groups.

☐ There is a high likelihood that personally identifiable information will be shared with non-City entities that will use the data for a purpose other than providing the City with a contractually agreed-upon service.

☒ The technology collects data that is personally identifiable even if obscured, de-identified, or anonymized after collection.

☐ The technology raises reasonable concerns about impacts to civil liberty, freedom of speech or association, racial equity, or social justice.

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Racial Equity Toolkit ("RET") and Engagement for Public Comment Worksheet | Surveillance Impact Report | ACYCLICA |page 24

1.2 What are the potential impacts on civil liberties through the implementation of this technology? How is the department mitigating these risks?

> Despite Acyclica's anonymization of raw data prior to aggregation, the perception may exist that The City is tracking its citizen's movements by leveraging the technology.

1.3 What are the risks for racial or ethnicity-based bias through each use or deployment of this technology? How is the department mitigating these risks?

Include a description of any issues that may arise such as algorithmic bias or the possibility for ethnic bias to emerge in people and/or system decision-making.

> Acyclica makes it feasible to provide drivers with real time information about how long it will take to reach a given destination. Travel time is also a key piece of information for transportation agencies. Real-time travel time information allows SDOT to monitor roadway performance, identify problems, develop forecasts, plan future projects, and evaluate the effects of new projects.
>
> The current deployment of the technology is primarily concentrated in and around the central business district and along several other major arterials. Through 2020 there are a series of technology projects installing Acyclica sensors along additional corridors including those that traverse historically diverse Seattle neighborhoods (e.g. Rainier Ave S and Martin Luther King Ways S).

1.4 Where in the City is the technology used or deployed?

☐ all Seattle neighborhoods

☒ Ballard	☒ Northwest
☒ Belltown	☐ Madison Park / Madison Valley
☐ Beacon Hill	☐ Magnolia
☒ Capitol Hill	☐ Rainier Beach
☒ Central District	☐ Ravenna / Laurelhurst
☐ Columbia City	☒ South Lake Union / Eastlake
☐ Delridge	☒ Southeast
☒ First Hill	☒ Southwest
☐ Georgetown	☐ South Park
☐ Greenwood / Phinney	☐ Wallingford / Fremont
☒ International District	☒ West Seattle
☒ Interbay	☐ King county (outside Seattle)
☒ North	☐ Outside King County.
☒ Northeast	

If possible, please include any maps or visualizations of historical deployments / use.

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1.4.1 What are the racial demographics of those living in this area or impacted by these issues?

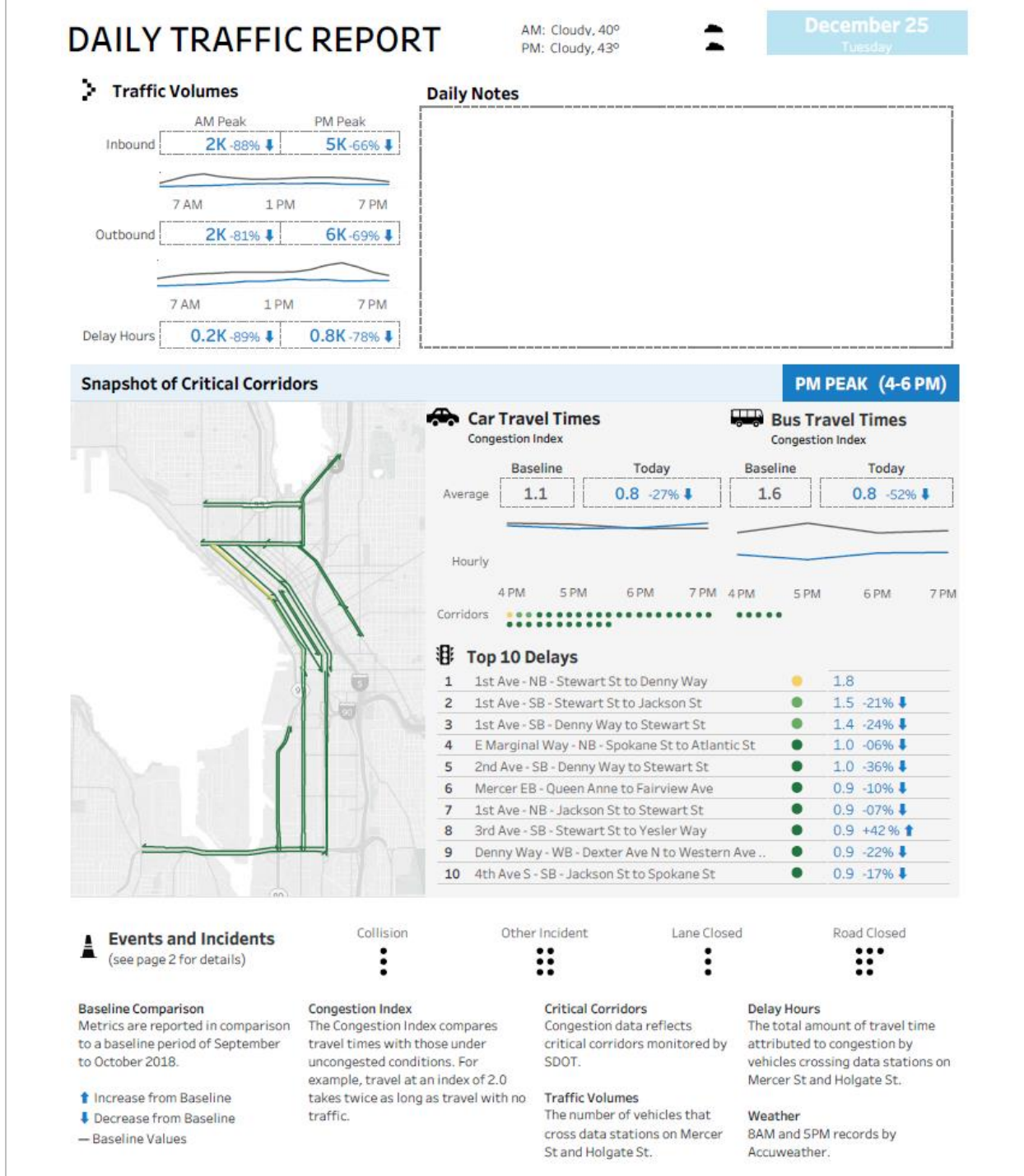From Seattle's Office of Planning & Community Development, Race & Ethnicity Quick Statistics:

Race and Ethnicity

Persons of Color: 34%
Hispanic / Latino Ethnicity (any race): 7%

- White
- Black or African American
- Asian
- Other
- Two or More Races

Other 4%
Two or More Races 5%
Asian 14%
Black or African American 8%
White 69%

Sources: 2010 Census, U.S. Census Bureau
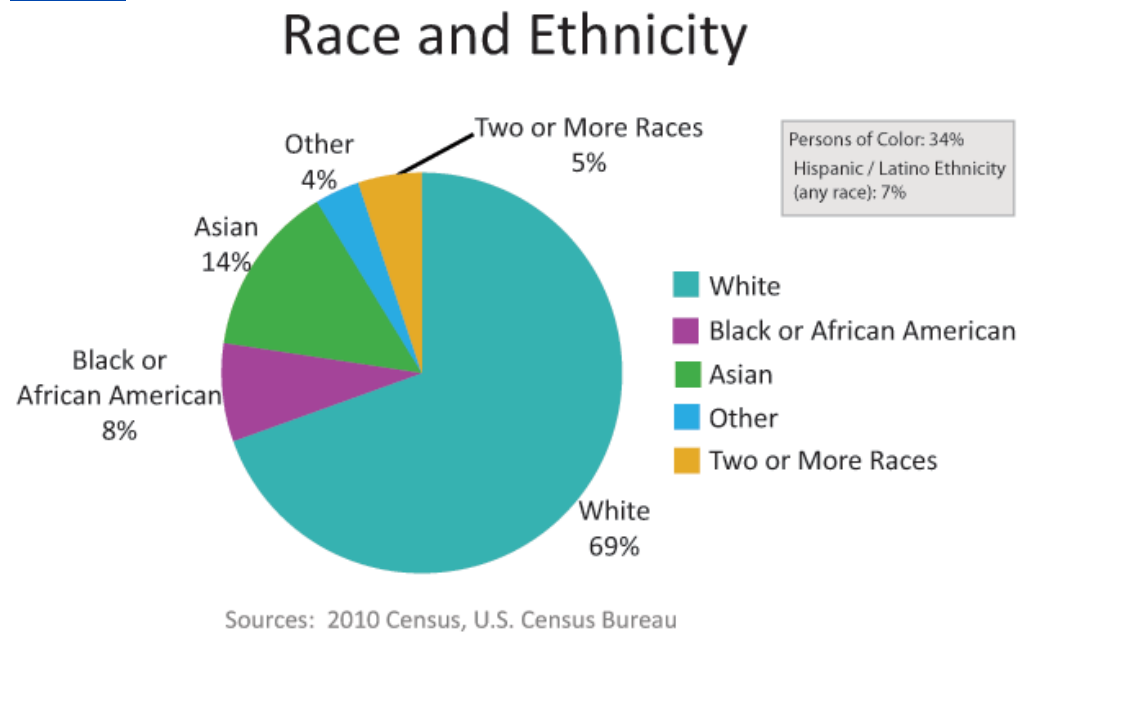
1.4.2 How does the Department to ensure diverse neighborhoods, communities, or individuals are not specifically targeted through the use or deployment of this technology?

Acyclica has created proprietary code that incorporates encryption technology using industry standard algorithm and cipher strengths, as well as inclusion of the use of a cryptographic hash function with a generated salt value. This anonymization ensures that the Department does not specifically target diverse neighborhoods, communities, or individuals through the use or deployment of this technology.

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1.5 How do decisions around data sharing have the potential for disparate impact on historically targeted communities? What is the department doing to mitigate those risks?

The department is mitigating the risk for creating disparate impacts on historically targeted communities around data sharing by creating reports that combine information around traffic volumes and travel times which are sourced anonymously:

DAILY TRAFFIC REPORT

AM: Cloudy, 40°
PM: Cloudy, 43°

December 25
Tuesday

Traffic Volumes

	AM Peak	PM Peak
Inbound	2K -88% ↓	5K -66% ↓
Outbound	2K -81% ↓	6K -69% ↓
Delay Hours	0.2K -89% ↓	0.8K -78% ↓

Daily Notes

Snapshot of Critical Corridors

PM PEAK (4-6 PM)

Car Travel Times
Congestion Index

Bus Travel Times
Congestion Index

	Baseline	Today	Baseline	Today
Average	1.1	0.8 -27% ↓	1.6	0.8 -52% ↓

Hourly

4 PM   5 PM   6 PM   7 PM   4 PM   5 PM   6 PM   7 PM

Corridors

Top 10 Delays

1	1st Ave - NB - Stewart St to Denny Way	●	1.8
2	1st Ave - SB - Stewart St to Jackson St	●	1.5 -21% ↓
3	1st Ave - SB - Denny Way to Stewart St	●	1.4 -24% ↓
4	E Marginal Way - NB - Spokane St to Atlantic St	●	1.0 -06% ↓
5	2nd Ave - SB - Denny Way to Stewart St	●	1.0 -36% ↓
6	Mercer EB - Queen Anne to Fairview Ave	●	0.9 -10% ↓
7	1st Ave - NB - Jackson St to Stewart St	●	0.9 -07% ↓
8	3rd Ave - SB - Stewart St to Yesler Way	●	0.9 +42% ↑
9	Denny Way - WB - Dexter Ave N to Western Ave ..	●	0.9 -22% ↓
10	4th Ave S - SB - Jackson St to Spokane St	●	0.9 -17% ↓

Events and Incidents
(see page 2 for details)

Collision   Other Incident   Lane Closed   Road Closed

Baseline Comparison
Metrics are reported in comparison to a baseline period of September to October 2018.

↑ Increase from Baseline
↓ Decrease from Baseline
— Baseline Values

Congestion Index
The Congestion Index compares travel times with those under uncongested conditions. For example, travel at an index of 2.0 takes twice as long as travel with no traffic.

Critical Corridors
Congestion data reflects critical corridors monitored by SDOT.

Traffic Volumes
The number of vehicles that cross data stations on Mercer St and Holgate St.

Delay Hours
The total amount of travel time attributed to congestion by vehicles crossing data stations on Mercer St and Holgate St.

Weather
8AM and 5PM records by Accuweather.

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1.6 How do decisions around data storage and retention have the potential for disparate impact on historically targeted communities? What is the department doing to mitigate those risks?

All traffic data storage and retention policies are equal regardless of where the information is sourced from.

1.7 What are potential unintended consequences (both negative and positive potential impact)? What proactive steps can you can / have you taken to ensure these consequences do not occur.

To the extent that people are not able to access SDOT Travelers Information or are not aware of the SDOT information, they may find more difficulties with their commutes or they may avoid the downtown area if they are worried about the cameras. To the extent that travel time data lead to transportation infrastructure and investment in certain areas or for certain modes (autos) have the sense of perpetuating inequities or privilege for white communities.

2.0 Public Outreach

2.1 Organizations who received a personal invitation to participate.

Please include a list of all organizations specifically invited to provide feedback on this technology.

1. ACLU of Washington	2. Ethiopian Community Center	3. Planned Parenthood Votes Northwest and Hawaii
4. ACRS (Asian Counselling and Referral Service)	5. Faith Action Network	6. PROVAIL
7. API Chaya	8. Filipino Advisory Council (SPD)	9. Real Change
10. API Coalition of King County	11. Friends of Little Saigon	12. SCIPDA
13. API Coalition of Pierce County	14. Full Life Care	15. Seattle Japanese American Citizens League (JACL)
16. CAIR	17. Garinagu HounGua	18. Seattle Neighborhood Group
19. CARE	20. Helping Link	21. Senior Center of West Seattle
22. Central International District Business Improvement District	23. Horn of Africa	24. Seniors in Action
25. Church Council of Greater Seattle	26. International ImCDA	27. Somali Family Safety Task Force
28. City of Seattle Community Police Commission (CPC)	29. John T. Williams Organizing Committee	30. South East Effective Development
31. City of Seattle Community Technology Advisory Board	32. Kin On Community Health Care	33. South Park Information and Resource Center SPIARC
34. City of Seattle Human Rights Commission	35. Korean Advisory Council (SPD)	36. STEMPaths Innovation Network
37. Coalition for Refugees from Burma	38. Latina/o Bar Association of Washington	39. University of Washington Women's Center
40. Community Passageways	41. Latino Civic Alliance	42. United Indians of All Tribes Foundation
43. Council of American Islamic Relations - Washington	44. LELO (Legacy of Equality, Leadership, and Organizing)	45. Urban League
46. East African Advisory Council (SPD)	47. Literacy Source	48. Wallingford Boys & Girls Club
49. East African Community Services	50. Millionair Club Charity	51. Washington Association of Criminal Defense Lawyers
52. Education for All	53. Native American Advisory Council (SPD)	54. Washington Hall
55. El Centro de la Raza	56. Northwest Immigrant Rights Project	57. West African Community Council
58. Entre Hermanos	59. OneAmerica	60. YouthCare
61. US Transportation expertise	62. Local 27	63. Local 2898
64. (SPD) Demographic Advisory Council	65. South Seattle Crime Prevention Coalition (SSCPC)	66. CWAC
67. NAAC		

2.2 Additional Outreach Efforts

Department	Outreach Area	Description
ITD	Social Media Outreach Plan: Twitter	Directed Tweets and Posts related to Open Public Comment Period for Group 2 Technologies, as well as the BKL event.
SPD, SFD, OPCD, OCR, SPL, SDOT, SPR, SDCI, SCL, OLS, Seattle City Council	Social Media Outreach Plan: Twitter	Tweets and Retweets regarding Group 2 comment period and/or BKL event.
ITD	Press Release	Press release sent to several Seattle media outlets.
ITD	Ethnic Media Press Release	Press Release sent to specific ethnic media publications.
ITD	Social Media Outreach Plan: Facebook Event Post	Seattle IT paid for boosted Facebook posts for their BKL event.
ITD	CTAB	Presented and utilized the Community Technology Advisory Board (CTAB) network and listserv for engaging with interested members of the public
ITD	Blog	Wrote and published a Tech Talk blog post for Group 2 technologies, noting the open public comment period, BKL event, and links to the online survey/comment form.
ITD	Technology Videos	Seattle IT worked with the Seattle Channel to produce several short informational/high level introductory videos on group 2 technologies, which were posted on seattle.gov/privacy. And used at a number of Department of Neighborhoods-led focus groups.

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2.3 Scheduled public meeting(s).

Meeting notes, sign-in sheets, all comments received, and questions from the public will be included in Appendix B, C, D, E, F, G, H and I. Comment analysis will be summarized in section 3.0 Public Comment Analysis.

Location	Bertha Knight Landes Room, 1st Floor City Hall 600 4th Avenue, Seattle, WA 98104
Time	February 27, 2018; 6 p.m. – 8 p.m.
Capacity	100+
Link to URL Invite	BKL Event Invitation

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2.4 Scheduled Focus Group Meeting(s)

The following Focus Groups were organized by the Department of Neighborhoods and may or may not have discussed this specific technology. The content of the focus group discussion was determined by the community engaged and/or the focus group attendees. A summary of the discussion notes may be found in Appendix D.

Meeting 1

Community Engaged	Council on American-Islamic Relations - Washington (CAIR-WA)
Date	Thursday, February 21, 2019

Meeting 2

Community Engaged	Entre Hermanos
Date	Thursday, February 28, 2019

Meeting 3

Community Engaged	Byrd Barr Place
Date	Thursday, February 28, 2019

Meeting 4

Community Engaged	Friends of Little Saigon
Date	Wednesday, February 27, 2019

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

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3.0 Public Comment Analysis

3.1 Summary of Response Volume and Demographic Information

Number of Public Participants
74

Total Public Comments
46

Participation Method

Method	Count
Survey Monkey	31
Public Meeting	19
Focus Group 2	8
Focus Group 1	6
Focus Group 4	6
Focus Group 3	4

Neighborhood

Neighborhood	Count
Ballard	15
Central District	5
Capitol Hill	4
First Hill	4
Ravenna / Laurelhurst	3
West Seattle	3
Beacon Hill	2
Belltown	2
Northeast	2
Rainier Beach	2
Beacon Hill, Southeast	1
Delridge	1
Greenwood / Phinney	1
Interbay	1
International District	1
Queen Anne	1
Southeast	1
Wallingford / Fremont	1
Prefer not to identify	18
King County (outside Seat..	4
Outside King County	2

Gender
- Prefer not to identify 24%
- Female 43%
- Male 32%

Age
- 18-44: 47%
- 45-64: 23%
- 65+: 9%
- Prefer not to identify: 20%

Ethnicity
- White or Caucasian: 43%
- Asian or Asian ..: 14%
- Black or African..: 12%
- Multiple Races or ..: 4%
- Hispanic or Latino: 1%
- Prefer not to identi..: 26%

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3.2 Question One: What concerns, if any, do you have about the use of this technology?

Question 1

What concerns, if any, do you have about the use of this technology?

Data Management: Concerns expressed on any part of the data lifecycle, including third party use, storage, and retention — 55%

Government Overreach and Civil Liberties: Concerns expressed with government unnecessarily or oversurveilling in a way that could impact individual rights and civil liberties — 27%

Policy, Enforcement, and Oversight: Concerns related to department and City policy, oversight, accountability, transparency, audit and policy enforcement — 13%

General: Nondescript concern or a concern that is not applicable to the specific technology — 4%
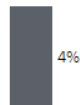
Public Safety: All applications of public safety from traffic and transit, to emergency response, and law enforcement — 2%
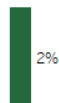
data access
traffic flow data storage concerned
audit cellphone data transparency data breach
accuracy inadequate policy disparate impact
information clarity government overreach
access controls third party vendor management
rights infringement pervasive surveillance privacy
misuse data collection data retention data sharing
overcollection alternate use data security
tracking data mining targeting

"My concern about this, as with all data about citizens collected by the city, is the potential for invasive abuse not intended at the time of collection."

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3.3 Question Two: What value, if any, do you see in the use of this technology?

Question 2

What value, if any, do you see in the use of this technology?

General: Nondescript value or a value that is not applicable to the specific technology — 50%

Public Safety: All applications of public safety from traffic and transit, to emergency response, and law enforcement — 44%

Efficiency and City Finance: Value related to an increase in City operational capacity and results in cost savings, revenue generation, innovation, or better service — 6%
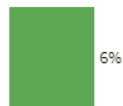
great value
nonvalue information resource facilitate traffic

"It is useful for transportation planners to be able to see aggregate, anonymous travel time information."

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3.4 Question Three: What do you want City leadership to consider about the use of this technology?

Question 3

What do you want City leadership to consider about the use of this technology?

Increase policy, enforcement, and oversight: Recommendations related to department and City policy, oversight, accountability, transparency, audit, and policy enforcement. — 61%

Improve data management: Recommendations to improve approach to data lifecycle management, including third party use, storage, and retention — 26%

Weigh Alternatives: Use a cost benefit analysis to determine if City budget should be used for these technologies, or other priorities. — 13%

agreement notification
alternate use   cease use   policy enforcement   data security
accountability   alternate technology   policy development
data sharing transparency consent   public oversight
security   data

"Data protection and usefulness of detecting wifi devices. Can we instead use other sensors that detect vehicles, rather than devices?"

3.5 Question Four: Do you have any other comments?

Question 4

Do you have any other comments?

Policy, Enforcement, and Oversight:
Comments related to department and City policy, oversight, accountability, transparency, audit and policy enforceme.. — 56%

Government Overreach and Civil Liberties:
Comments related to government unnecessarily or oversurveilling in a way that could impact individual rights and civil liberties — 33%

Data Management: Comments related to all things data throughout data lifecycle including third party use — 11%

third party   accountability
privacy alternate technology cease use
overcollection inadequate policy

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4.0 Equity Annual Reporting

4.1 What metrics for this technology will be reported to the CTO for the annual equity assessments?

The Seattle Department of Transportation is currently working to finalize the metrics.

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

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Privacy and Civil Liberties Assessment

Purpose

This section shall be completed after public engagement has concluded and the department has completed the racial equity toolkit section above. The privacy and civil liberties assessment is completed by the community surveillance working group ("working group"), per the surveillance ordinance which states that the working group shall:

"Provide to the executive and the City Council a privacy and civil liberties impact assessment for each SIR that must be included with any departmental request for surveillance technology acquisition or in-use approval. The impact assessment shall include a description of the potential impact of the surveillance technology on civil rights and liberties and potential disparate impacts on communities of color and other marginalized communities. The CTO shall share with the working group a copy of the SIR that shall also be posted during the period of public engagement. At the conclusion of the public engagement period, the CTO shall share the final proposed SIR with the working group at least six weeks prior to submittal of the SIR to Council for approval. The working group shall provide its impact assessment in writing to the executive and the City Council for inclusion in the SIR within six weeks of receiving the final proposed SIR. If the working group does not provide the impact assessment before such time, the working group must ask for a two-week extension of time to City Council in writing.   If the working group fails to submit an impact statement within eight weeks of receiving the SIR, the department and City Council may proceed with ordinance approval without the impact statement."

Working Group Privacy and Civil Liberties Assessment

> The Working Group's Privacy and Civil Liberties Impact Assessment for this technology is below, and is also included in the Ordinance submission package, available as an attachment.

From: Seattle Community Surveillance Working Group
(CSWG) To: Seattle City Council

Date: June 4, 2019

Re: Privacy and Civil Liberties Impact Assessment for Acyclica (SDOT)

Executive Summary

On April 25, 2019, the CSWG received the Surveillance Impact Report (SIR) on Acyclica, a surveillance technology included in Group 2 of the Seattle Surveillance Ordinance technology review process. This document is CSWG's Privacy and Civil Liberties Impact Assessment for this technology as set forth in SMC 14.18.080(B)(1), which we provide for inclusion in the final SIR submitted to the City Council.

This document first provides our recommendations to the Council, then provides background information, key concerns, and outstanding questions on Acyclica technology.

Our assessment of Acyclica focuses on three major issues rendering protections around this technology inadequate:

1. SDOT has no explicit policies governing its use of Acyclica technology.
2. There is no contract between SDOT and Acyclica, which contributes to the following concerns:
   a. There is no policy or other agreement that ensures SDOT owns the non-aggregated data collected by Acyclica devices;
   b. Acyclica's stated data security practices are misleading and unclear;
   c. There are no limits on Acyclica's retention of non-aggregated data; and
   d. There is no limit on or designation of which third parties will access Acyclica's data, for what purpose, and under what conditions.
3. There is no evaluation of the technical abilities of the EDI DA-300 (the new sensor that we have learned will replace the RoadTrend sensor evaluated in the SIR), and it is not stated whether the EDI DA-300 will be used in conjunction with or replace all RoadTrend sensors.

Recommendations

The Council should adopt, via ordinance, clear and enforceable rules that ensure, at the minimum, the following:

1. The purpose of Acyclica technology must be clearly defined, and operation of the technology and data collected by it must be explicitly restricted to those purposes only. For example: Acyclica may only be used for traffic management purposes, explicitly defined as activities concerning calculating average travel times, regulating traffic signals, controlling traffic disruptions, determining the placement of barricades or signals for the duration of road incidents impeding normal traffic flow, providing information to travelers about traffic flow and expected delays, and allowing SDOT to meet traffic records and reporting requirements.

2. There must be a written, binding contract directly between SDOT and Acyclica (as well as Western Systems, if applicable) that includes the following minimum provisions:
   a. SDOT owns all data, not Acyclica (or FLIR, the company that acquired Acyclica).
   b. SDOT receives only aggregated data.
   c. The data retention period for any data Acyclica collects shall be 12 hours or less, within which time Acyclica must aggregate the data, submit it to SDOT, and delete both the non-aggregated and aggregated data.
   d. Acyclica cannot share the data collected with any other entity besides SDOT for any purpose.

3. SDOT must produce an annual report detailing its use of Acyclica, including details of what data is collected, how much data is collected, how SDOT used the data collected, for how long it was retained, and in what form.

Background: Privacy and Civil Liberties Concerns with Acyclica Technology

Acyclica technology is a transportation management tool used by SDOT that raises privacy and civil liberties concerns because of its ability to uniquely track, identify, and create a detailed map of individuals' movements. Acyclica manufactures Intelligent Transportation System (ITS) sensors called RoadTrend that collect encrypted media access control (MAC) addresses—unique identifiers attached to devices—from any WiFi-enabled device (e.g., cell phones, computers, and vehicles) within range of the sensors in Seattle.

Because these sensors are placed on at least 301 intersections in Seattle and collect and record MAC addresses 24 hours a day, 7 days a week, and 365 days a year, Acyclica can generate extremely precise location information about individuals. Not only do the RoadTrend sensors pick up the MAC addresses of drivers and riders in vehicles, but they can also pick up the MAC addresses of all nearby individuals, including pedestrians, bicyclists, and people in close buildings (e.g. apartments and offices). This powerful location-tracking technology raises privacy concerns for Seattle residents, who may be tracked without their consent by this technology while going about their daily lives.

These privacy concerns are exacerbated by the absence of specific policies governing use of Acyclica technology and the absence of a contract between SDOT and Acyclica. Without contractual restrictions on data use, ownership, and sharing, Acyclica data can be shared with third parties (e.g., companies and law enforcement), may be combined with additional data such as facial recognition data, and repurposed for non-traffic management purposes.

Of additional concern is that the RoadTrend sensors evaluated in the current SIR were discontinued in March 2019 after Acyclica was acquired by FLIR Systems, an infrared and thermal imaging company funded by the U.S. Department of Defense. While SDOT states that it is in the process of procuring a new sensor, the EDI DA-300, the SIR does not include an evaluation of this new sensor's capabilities.

Finally, while SDOT cites cost savings and Acyclica's ability to accurately measure traffic times as the two key reasons it decided to procure Acyclica technology, the results of the study attached to the SIR[1] are inconclusive on Acyclica's accuracy. The study states: "In terms of accuracy, Acyclica did not perform as well as desired."[2] Given this assessment, it is unclear how privacy and civil liberties concerns were considered when SDOT made the decision to acquire Acyclica—while Acyclica may generate cost savings relative to some other (but potentially not all) comparable technologies, it also creates new privacy challenges without presenting clear gains on accuracy.

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[1] *Acyclica Travel Time Accuracy & Reliability Analysis*

[2] The study states, "Acyclica did not pass the t-test because the results showed that the means were not the same." This means that Acyclica was unable to produce similar values to License Plate Reader Cameras, which were assumed to represent the ground truth. Though it is possible that the LPR data itself could have been inaccurate, the study's results are inconclusive on Acyclica's accuracy in measuring traffic times.

Retroactive Technology Request By: SEATTLE DEPARTMENT OF TRANSPORTATION

Background: Privacy and Civil Liberties Concerns with Acyclica Technology | Surveillance Impact Report | ACYCLICA |page 43

Key Concerns

(1) **There are no specific policies defining purpose of use.** In the updated SIR, SDOT states, "We have no specific policies guiding our use of Acyclica, but SDOT's intent is to use this data service to deliver travel time, delay, analytics and other traffic data."[3] This stated intent and other uses cited in the SIR are vague and impose no meaningful restrictions on the purposes for which Acyclica devices may be used. For example:

- Section 1.1 of the abstract states that Acyclica is used by over 50 agencies "to help to monitor and improve traffic congestion."
- Section 2.1 provides some examples of types of information Acyclica uses (e.g., calculated average speeds) to produce certain outcomes (e.g., correcting traffic signal timing), but it is unclear if the examples cited constitute a complete list.

The above statements do not describe the purpose of use, all the types of information Acyclica collects, and all the types of work that Acyclica technology facilitates.

(2) **There is no contract between SDOT and Acyclica.** In the updated SIR, SDOT states, "SDOT does not have a contract with Acyclica."[4] Without a contract or statutory protections, data ownership and restrictions on the scope of data sharing and repurposing cannot be enforced. For example, without contractual restrictions or statutory protections, Acyclica would be able to share the raw data (i.e., the non-aggregated, hashed data before it is summarized and sent to SDOT) with any third parties, and these third parties would be able to use the data in any way they see fit, including combining the data with additional data such as license plate readers or facial recognition data. Because SDOT does not have a contract with Acyclica, even if SDOT did have specific policies defining and restricting purpose of use, SDOT cannot enforce those policies restricting the use of Acyclica technology to the intended purpose.

(3) **There is a lack of clarity on data ownership.** In the updated SIR, SDOT states, "SDOT owns the raw and aggregated data. See the attached letter *SDOT Acyclica Data Ownership* which clarifies that."[5] However the attached letter[6] does not actually provide any documentation showing that SDOT owns the raw (i.e., non-aggregated) data. This letter simply states that FLIR will not grant unauthorized users access to Acyclica software.[7]

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[3] 2019 Surveillance Impact Report Acyclica SDOT, Appendix F, page 120.

[4] Ibid.

[5] Ibid.

[6] See Appendix A – Letter on SDOT Acyclica Data Ownership

[7] Moreover, in a 2018 conversation between the American Civil Liberties of Washington (ACLU-WA) and Daniel Benhammou (President of Acyclica), Benhammou stated that Acyclica owns all of the non-aggregated data. These contradictory statements make it unclear who actually owns the non-aggregated data.

(4) **There are no limits on Acyclica data retention.** In the updated SIR, SDOT states, "Acyclica/FLIR does not have a limit on data retention. The reason for this policy is that as they develop new methods of analyzing traffic, the analyses are effective as of the date the sensors were first deployed rather than when the feature was first available in the software."[8] If SDOT owns all of the data, including the non- aggregated data, it is unclear why Acyclica/FLIR would be setting their own limits on data retention. The upshot appears to be no enforceable limits on data retention.

(5) **There is a lack of clarity on the capabilities and usage of the new Acyclica/FLIR sensor (EDI DA- 300).[9]** Acyclica has recently been acquired by FLIR Systems, and the RoadTrend sensors evaluated in the SIR have been discontinued. SDOT states: "Since the RoadTrend product line was discontinued, we've begun procuring the EDI DA-300 (please see attached data sheet) in its place. The EDI DA-300 will be the model we consistently deploy in the foreseeable future, and there are no plans to consider an alternative at this point. This unit has additional features differentiating it from the RoadTrend such as generating alarms when a traffic cabinet door is opened, and the ability to provide remote access to traffic signals using cellular communication." It is unclear whether the EDI DA-300 will be used in conjunction with or to replace all RoadTrend Sensors. Because a full description of the capabilities of the EDI DA-300 has not been included in the SIR, neither the public nor the CSWG was been able to conduct a full evaluation of the technology. The involvement of Western Systems[10], a third-party vendor which is the only entity with whom SDOT currently appears to have a written agreement, further complicates matters—it is unclear if terms in the MoU with Western Systems are still applicable. The relationship between SDOT, Western Systems, and Acyclica/FLIR must be explicitly clarified, and explicit contractual terms ensuring purpose, operation, data use, data dissemination, and data deletion should be put in place if they do not already exist.

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[8] 2019 Surveillance Impact Report Acyclica SDOT, Appendix F, page 121.

[9] The initial SIR failed to mention that Acyclica had been acquired by FLIR and that the RoadTrend sensor had been discontinued. Only in response to the ACLU-WA's pointed questions did SDOT include in the updated SIR that it was aware of the FLIR acquisition and has been making clear plans to procure a new sensor.

[10] Western Systems is the vendor that owns, operates, and is responsible for the maintenance and replacement of the hardware used to gather the data.

(6) **There are inaccurate and contradictory descriptions of data security practices.[11]** The SIR states in multiple sections that the data collected by the RoadTrend sensors are encrypted and hashed on the actual sensor.[12] However, according to a letter from Daniel Benhammou (President of Acyclica) provided by SDOT representatives at the first public comment meeting on the Group 2 technologies,[13] the data is never hashed on the sensor—the data is only hashed after being transmitted to Acyclica's cloud server. The response from SDOT in the updated SIR does not clarify whether the data is or is not hashed on the sensor. It simply states: "Prior to being transmitted from the sensor in the field to the cloud, the data is encrypted end-to-end using TLS and a 2048-bit encryption certificate." These contradictory descriptions make it difficult to understand Acyclica's data security practices.

(7) **It is unclear which third parties have access to the non-aggregated data, for what purpose, and under what conditions.** In the updated SIR, SDOT states: "Acyclica has given the ability for cities to manage their own users and additionally taken steps to eliminate data sharing unless the owning city has given explicit authorization. Existing users of SDOT's aggregated travel time data include: (1) SDOT staff conducting engineering studies, (2) WSDOT and KC Metro staff conducting engineering studies in partnership with SDOT, (3) Consulting partners who build traffic products on SDOT's behalf."[14] It is unclear if these users listed are *all* the users that have access to SDOT's aggregated travel time data. Of greater importance, it remains unclear who has access to the non-aggregated data, if any, for what purposes, and under what conditions.

Outstanding Questions

The following information should be included in an update to the Acyclica SIR:

(1) Who owns the non-aggregated data collected by Acyclica devices, and what policies or other documentation state this?
(2) What are Acyclica's data security practices, and what policies or other documentation state this?
(3) Which third parties that will access Acyclica's data (both aggregated and non-aggregated), for what purpose, and under what conditions?
(4) What is the relationship between SDOT, Acyclica/FLIR, and Western Systems? Are the Western Systems terms still applicable given the FLIR acquisition?
(5) What are the capabilities of the new EDI DA-300 sensors?

The answers to these questions can further inform the content of any binding policy the Council chooses to include in an ordinance on this technology, as recommended above.

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[11] Section 7.2 of the SIR states: "Contractually, Acyclica guarantees that the data is encrypted to fully eliminate the possibility of identifying individuals or vehicles." But by design, encryption allows for decryption with a key, meaning anyone with that key or access to the data can identify individuals.

[12] 2019 Surveillance Impact Report Acyclica SDOT, Section 4.2, page 11.

[13] See Appendix B – Benhammou Letter

[14] 2019 Surveillance Impact Report Acyclica SDOT, Appendix F, page 121.

Appendix A – Letter on SDOT Acyclica Data Ownership

FLIR | The World's Sixth Sense™

March 14, 2019

Jason Cambridge

Seattle Department of
Transportation 700 5th Avenue
Seattle, WA

Dear Mr. Cambridge,

Thank you for taking the time to meet with me on the 14th of March to discuss data privacy and ownership. When we started working with Seattle DOT in 2014, we committed that the only parties who would have access to the data generated by Seattle DOT would employees and those individuals which authorized users had granted access to the Acyclica software. FLIR's contractual obligations for data and support have been governed by the terms of use and the contract which our intermediary, Western Systems, executed with Seattle DOT. Some of these users, as designated by Seattle DOT have also been granted APIs for programmatically accessing aggregated data.

Moving forward, we renew our commitment to data privacy and security. FLIR will not grant access to Seattle DOT data to anyone without the express, written consent to do so. As the needs of Seattle DOT evolve, we are open to implementing additional measures to protect privacy of individuals while providing the best insights through the Acyclica platform.

Best Regards,

Daniel Benhammou

Senior Director, Software and
Solutions FLIR Systems, Inc.

Appendix B - Benhammou Letter

Acyclica

February 6th, 2015

RE: Acyclica data privacy standards

To whom it may concern:

The purpose of this letter is to provide information regarding the data privacy standards maintained by Acyclica. Acyclica is a traffic information company specializing in traffic congestion information management and analysis. Among the various types of data sources which make of Acyclica's traffic data portfolio including GPS probe data, video detection and inductive loops, Acyclica also utilizes our own patent-pending technology for the collection of Bluetooth and Wifi MAC addresses. MAC or Media Access Control addresses are unique 48-bit numbers which are associated with devices with Bluetooth and/or Wifi capable devices.

While MAC addresses themselves are inherently anonymous, Acyclica goes to great lengths to further obfuscate the original source of data through a combination of hashing and encryption to all but guarantee that information derived from the initial data bears no trace of any individual.

Acyclica's technology for collecting MAC addresses for congestion measurement operates by detecting nearby MAC addresses. The MAC addresses are then encrypted using GPG encryption before being transmitted to the cloud for processing. Encrypting the data prior to transmission means that no MAC addresses are ever written where they can be retrieved from the hardware. Once the data is received by our servers, the data is further anonymized using a SHA-256 algorithm which makes the raw MAC address nearly impossible to decipher from the hashed output. Furthermore, any customer seeking to download data for further investigation or integration through our API can only ever view the hashed MAC address.

Acyclica occasionally provides data to partners to help enhance the quality of congestion information. The information which is provided to such partners is received through API calls which only return aggregated information about traffic data over a given period such as the average travel-time over a 5-minute period. Aggregating the data provides a final layer of anonymization by reporting on the collective trend of all vehicles rather than the specific behavior of a single vehicle.

As always questions, comments and concerns are welcome. Please do let me know if we can provide further clarity and transparency on our internal operations with regards to data processing and privacy standards. We take the privacy of the public very seriously and always treat our customers and the data with the utmost respect.

Regards,

Daniel Benhammou
President
Acyclica Inc.

CTO Response

Memo

Date: 11/17/2020

To: Seattle City Council, Transportation and Utilities Committee

From: Saad Bashir

Subject: CTO Response to the Surveillance Working Group Acyclica SIR Review

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To the Council Transportation and Utilities Committee Members,

I look forward to continuing to work together with Council and City departments to ensure continued transparency about the use of surveillance technologies and finding a mutually agreeable means to use technology to improve City services while protecting the privacy and civil rights of the residents we serve. Specific concerns in the Working Group comments about Acyclica are addressed in the attached document.

As provided in the Surveillance Ordinance, SMC 14.18.080, this memo outlines the Chief Technology Officer's (CTO's) response to the Surveillance Working Group assessment on the Surveillance Impact Report for Seattle Department of Transportation's Acyclica technology.

Background

The Information Technology Department (ITD) is dedicated to the Privacy Principles and Surveillance Ordinance objectives to provide oversight and transparency about the use and acquisition of specialized technologies with potential privacy and civil liberties impacts. All City departments have a shared mission to protect lives and property while balancing technology use and data collection with negative impacts to individuals. This requires ensuring the appropriate use of privacy invasive technologies through technology limitations, policy, training and departmental oversight.

The CTO's role in the SIR process has been to ensure that all City departments are compliant with the Surveillance Ordinance requirements. As part of the review work for surveillance technologies, ITD's Privacy Office has facilitated the creation of the Surveillance Impact Report documentation, including collecting comments and suggestions from the Working Group and members of the public about these technologies. IT and City departments have also worked collaboratively with the Working Group to answer additional questions that came up during their review process.

Technology Purpose

Acyclica devices measure real time vehicle travel times on city streets. They identify Wi-Fi-enabled devices in vehicles (like smart phones) traveling between multiple sites. They are small sensors installed in SDOT street furniture, like traffic signal control boxes. SDOT uses this technology to determine travel time on city streets. Using the detection of unique addresses, Acyclica identifies and differentiates vehicle movement as it approaches, stops, and leaves an intersection. We use this data to help improve the traffic operations of Seattle's road networks. It also helps us improve safety and mobility for all travelers.

SDOT uses the aggregated data provided by Acyclica to assess traffic flow and congestion, correct signal timing, and share information to travelers about expected delays. Acyclica always encrypts the unique addresses they collect, and this process cannot be reversed. Personally-identifiable information that could be used to identify, contact, or locate a single person, is not accessible to SDOT, the vendor, or the public.

Working Group Concerns

In their review, the Working Group has raised concerns about this technology being used in a privacy impacting way. The specific concerns are:

1. Lack of explicit policies governing SDOT use of Acyclica technology.
2. Lack of a contract between SDOT and Acyclica, which contributes to the following concerns:
   a. Ensures SDOT ownership of non-aggregated data collected by Acyclica devices;
   b. Provides clarification of data security practices
   c. Provides clarification about retention of non-aggregated data;
   d. Limit on or designation about third party data access, including for purpose, and conditions.
3. Lack of evaluation of the technical abilities of the EDI DA-300 (the new sensor that we have learned will replace the RoadTrend sensor evaluated in the SIR), and it is not stated whether the EDI DA-300 will be used in conjunction with or replace all RoadTrend sensors.

We have evaluated the technology, policy and contract concerns outlined by the Working Group and are confident that that policy, training and technology limitations enacted by SDOT provide adequate mitigation for the potential privacy and civil liberties concerns raised by the Working Group about the use of this important operational technology. Details are provided below:

Response to Specific Concerns: Acyclica

Concern: Lack of explicit policies governing SDOT use of Acyclica technology

CTO Assessment: Acyclica technology specifically created to collect data to determine real time traffic travel times. It does not collect personally identifiable information that may be used for other purposes. Data is de-identified from individuals and may not be reconstituted for re-identification or tracking purposes. Policies limiting use are not relevant or useful as the technology is limited to the use for which it was developed. Details about the use and limitations of the data collection is provided in the SIR responses, provided below:

SIR Response:
Section 1.1: Please provide a brief description of the technology purpose.
Acyclica is a provider of high resolution, real-time traffic congestion information. Acyclica's suite of traffic analytics software and sensor devices is currently being used by over 50 agencies both domestic and international to help to monitor and improve traffic congestion. Acyclica works with cities, municipalities, and transportation departments to aggregate and analyze data to bridge gaps in traditional traffic data services.

Section 2.5: Who will be involved with the deployment and use of the project / technology?

Deployment and maintenance of Acyclica devices is provided by Western Systems, a transportation solutions vendor with which the City has had a long relationship. SDOT Signal Electricians are also on site for every deployment to ensure the work is completed properly per standard practice. The data is primarily used by both our Traffic Signal Timing Engineers and Transportation Operations Center (TOC) staff. Timing Engineers work with modeling software to optimize traffic movements, and the travel time data provided by Acyclica informs the effectiveness of their actions. The TOC provides the data to commuters in real-time on both large roadside reader boards, and on the Traveler Information Map web application.

Concern: Lack of a contract between SDOT and Acyclica: data ownership, security practices, retention of non-aggregated data, clarification about 3rd-party data access

CTO Assessment: The contract between SDOT and Western Systems provides details about ownership, retention and access of the data collected. These are well-delineated contractually and in the terms of use.

As this SIR was drafted and finalized in 2018 prior to FLIR's acquisition of Acyclica, the SIR may not reflect information related to a contract between SDOT and FLIR. In the future, if SDOT acquires Acyclica directly from FLIR instead of Western Systems, any obligations related to data ownership, security practices, retention of non-aggregated data, and 3rd party data access will be addressed in the agreement.

Details about SDOT's current agreement regarding data ownership with Western Systems follow:

Clarification about Data Ownership
SDOT owns the raw and aggregated data. The CEO of Acyclica confirmed that, "FLIR's contractual obligations for data and support have been governed by the terms of use and the contract which our intermediary, Western Systems, executed with Seattle DOT… FLIR will not grant access to Seattle DOT data to anyone without the express, written consent to do so. "

SIR Response:
Section 5.2: Acyclica has built specific security language into their contracts to clearly delineate the responsibilities between Acyclica and the customer/client for security of data and associated requirements. The aggregated traffic data is owned by SDOT,

Clarification about Data Security Practices & 3rd Party Access
Section 2.5.1 of SDOT's agreement with Western Systems provides details around required security practices and third-party access:
> 2.5.1. It is the understanding of the City that the data gathered are encrypted to fully eliminate the possibility of identifying individuals or vehicles. In no event shall City or Western Systems and its subcontractors make any use of the data gathered by the devices for any purpose that would identify the individuals or vehicles included in the data.

Section 4.10: What safeguards are in place, for protecting data from unauthorized access (encryption, access control mechanisms, etc.) And to provide an audit trail (viewer logging, modification logging, etc.)?

Acyclica has created proprietary code that incorporates encryption technology using industry standard algorithm and cipher strengths, as well as inclusion of the use of a cryptographic hash function with a generated salt value.

A cryptographic hash function is a way to easily validate that a string of data corresponds to a specific hash value. If the original data string is unknown, but the stored hash value is known, by design, the cryptographic hash function makes it challenging to recreate the original data string. Utilization of hash function is intended to assure the integrity of data in transmission. In cryptography, a salt is a random piece of data that is used, in addition to a string of data, and in the creation of a hash value through use of a hash function. The primary function of salts is to prevent retro calculation of the hashed value if the hash function is known. Use of a salt precludes the effectiveness of using a list of possible pre-computed values since the salt is randomly generated.

With Acyclica's proprietary technology solutions, the salt rotates every 24 hours on the actual sensor device. The salt value is determined by timestamp which enables the hash to be dynamic. This encryption methodology is per industry standard protocols. Additionally, there is proprietary code that is running on the sensor device that performs the encryption function. The methodology of transmission to the cloud is a direct post to the back-end systems, versus an HTTPS transmission or broadcast over open, public networks which is considered less secure.

Section 5.1: How will data be securely stored?
Acyclica uses of a pared down proprietary Linux installation with a specific embedded Computer Processing Unit (CPU) chosen for processing optimization. Minimal storage is available on this device to enable only intended functionality and to also limit data retained. Additionally, there are specific access controls set to ensure restricted logical access to the device. Acyclica also employs logical access controls to ensure minimally assigned access and privileges, on a need-to-know basis. Vulnerability of systems is managed with patch procedures and change management processes, and logs are captured and monitored for maximum security awareness of the state of the devices and systems.

Section 3.1: Describe the processes that are required prior to each use, **or access to**/ of the project / technology, such as a notification, or check-in, check-out of equipment.

The City of Seattle is purchasing data as a service (terms are attached below). Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data. The devices are then monitored for malfunction, and issues are resolved through cooperation between the two entities. Acyclica's aggregated data is available from their cloud server through a secure web portal. Only specified personnel have access to that site. The data is also available for consumption using a web application programming interface (API), which is what the TOC leverages to provide the information to the public.

Section 4.7: How will data that is collected be accessed and by whom?

All aggregated traffic data will be accessed by SDOT personnel through Acyclica's web portal, or by applications leveraging the API. Users include:

1. Intelligent Transportation System Engineers
2. Transportation Operations Center Staff
3. Traffic Signal Timing Engineers
4. Traffic Operations Division Leadership

Section 4.8: If operated or used by another entity on behalf of the City, provide details about access, and applicable protocols.

Deployment and maintenance of Acyclica devices is provided by Western Systems, a transportation solutions vendor with which the City has had a long relationship. Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data. The devices are then monitored for malfunction, and issues are resolved through cooperation between the two entities.

No user (including the vendor administrator) can access personally identifiable information from the web portal as it only provides the corresponding results of data aggregation. SDOT may provide access to the hashed data to consultants who are performing work on our behalf. This is accomplished by an SDOT administrator creating a user on Acyclica's front-end web application and providing those credentials to the consultant. Once the contract has concluded that user access will be eliminated. Types of accessible information include:
- Route Travel Times by Segment
- Speed
- Congestion Index
- Route Delay
- Progression Diagram
- Route Speed by Segment
- Timing Plan Analysis
- Day of Week Analysis
- Weekly Analysis
- Timing Run
- Delay by Phase
- Delay by Approach
- Idle Emissions
- Purdue Coordination Diagram

Section 6.1: Which entity or entities inside and external to the City will be data sharing partners?
SDOT receives and shares summarized traffic information with a variety of internal stakeholders, as well as the motoring public. However, the underlying anonymized data used to create that information is unavailable to SDOT or any other partner.

Section 6.2: Why is data sharing necessary?
SDOT and data sharing partners have no access to the anonymized data used by Acyclica to create travel times and other information, but strictly the aggregated data related to traffic flow. The summarized traffic information that comes to SDOT and is shared with the public, is necessary to make traffic and route-planning decisions.

Section 7.2: Describe what privacy training is provided to users either generally or specifically relevant to the project/technology.
Contractually, Acyclica guarantees that the data gathered is encrypted to fully eliminate the possibility of identifying individuals or vehicles. No user can access personally identifiable information from the web portal as it only provides aggregated data. Users are trained on how to use the web portal to pull reports relevant to their program or project. Applications of Acyclica technology include: signal timing & coordination, traffic network optimization, street parking congestion analysis, congestion mapping,

route planning, work zone congestion enforcement, variable message signs, incident detection, emergency responder routing and route utilization.

Additionally, all SDOT employees are required to take annual Privacy and Information Security Awareness training as provided by Seattle IT.

Clarification about Data Retention
For the purposes of validating new traffic analysis methods, Acyclica / FLIR does not have a limit on data retention. However, SDOT adheres to the defined retention and deletion schedule for data produced by this technology.

Section 5.2: The aggregated traffic data is owned by SDOT, and there is a 10-year internal deletion requirement per item #42 of the SDOT Public Retention Schedule & Destruction Authorization Schedule. Link:
http://www.seattle.gov/Documents/Departments/Tech/SDOT%20Records%20Retention%20Schedule.pdf

Concern: Lack of evaluation of the technical abilities of the EDI DA-300
CTO Assessment:
Since the RoadTrend product line was discontinued, SDOT has begun procuring the EDI DA-300 in its place. The EDI DA-300 will be the model consistently deployed in the foreseeable future. The unit has additional features differentiating it from the RoadTrend such as generating alarms when a traffic cabinet door is opened, and the ability to provide remote access to traffic signals using cellular communication. The ACLU expressed concern that because the EDI DA-300 was acquired by another company (FLIR) that manufactures infrared sensors, this would be another feature of this sensor. While there are additional features to the DA-300, it does not have infrared sensing capabilities. A list of additional features are as follows:

- Provides improved interfaces with controllers and detectors
- Adds enhanced critical data retrieval capabilities
- Allows users to add remote intersection data to the Advanced Traffic Management System (ATMS) data set
- Provides cabinet health and GPS-based time sync for functional monitoring
- Contains an internal battery back-up for critical alarm generation
- Accesses remote intersections via 3G/4G/LTE cellular
- Gathers travel time data from Wi-Fi or Bluetooth sensors
- Interfaces with any iCITE Ready™ data analytics provider

SIR Response:
Since the SIR was drafted and finalized in 2018, the RoadTrend sensor has since been discontinued, and thus the SIR does not contain references to the EDI DA-300 at this time. The data sheet for the EDI DA-300 is included in the supporting documentation of the SIR in Appendix I.

Appendix A: Glossary

Accountable: (taken from the racial equity toolkit.) Responsive to the needs and concerns of those most impacted by the issues you are working on, particularly to communities of color and those historically underrepresented in the civic process.

Community outcomes: (taken from the racial equity toolkit.) The specific result you are seeking to achieve that advances racial equity.

Contracting equity: (taken from the racial equity toolkit.) Efforts to achieve equitable racial outcomes in the way the City spends resources, including goods and services, consultants and contracting.

DON: "department of neighborhoods."

Immigrant and refugee access to services: (taken from the racial equity toolkit.) Government services and resources are easily available and understandable to all Seattle residents, including non-native English speakers. Full and active participation of immigrant and refugee communities exists in Seattle's civic, economic and cultural life.

Inclusive outreach and public engagement: (taken from the racial equity toolkit.) Processes inclusive of people of diverse races, cultures, gender identities, sexual orientations and socio-economic status. Access to information, resources and civic processes so community members can effectively engage in the design and delivery of public services.

Individual racism: (taken from the racial equity toolkit.) Pre-judgment, bias, stereotypes about an individual or group based on race. The impacts of racism on individuals including white people internalizing privilege, and people of color internalizing oppression.

Institutional racism: (taken from the racial equity toolkit.) Organizational programs, policies or procedures that work to the benefit of white people and to the detriment of people of color, usually unintentionally or inadvertently.

OCR: "Office of Civil Rights."

Opportunity areas: (taken from the racial equity toolkit.) One of seven issue areas the City of Seattle is working on in partnership with the community to eliminate racial disparities and create racial equity. They include: education, health, community development, criminal justice, jobs, housing, and the environment.

Racial equity: (taken from the racial equity toolkit.) When social, economic and political opportunities are not predicted based upon a person's race.

Racial inequity: (taken from the racial equity toolkit.) When a person's race can predict their social, economic, and political opportunities and outcomes.

RET: "racial equity toolkit"

Seattle neighborhoods: (taken from the racial equity toolkit neighborhood.) Boundaries defined for the purpose of understanding geographic areas in Seattle.

Stakeholders: (taken from the racial equity toolkit.) Those impacted by proposed policy, program, or budget issue who have potential concerns or issue expertise. Examples might include: specific racial/ethnic groups, other institutions like Seattle housing authority, schools, community-based organizations, change teams, City employees, unions, etc.

Structural racism: (taken from the racial equity toolkit.) The interplay of policies, practices and programs of multiple institutions which leads to adverse outcomes and conditions for communities of color compared to white communities that occurs within the context of racialized historical and cultural conditions.

Surveillance ordinance: Seattle City Council passed ordinance 125376, also referred to as the "surveillance ordinance."

SIR: "surveillance impact report", a document which captures the fulfillment of the Council-defined surveillance technology review process, as required by ordinance 125376.

Workforce equity: (taken from the racial equity toolkit.) Ensure the City's workforce diversity reflects the diversity of Seattle.
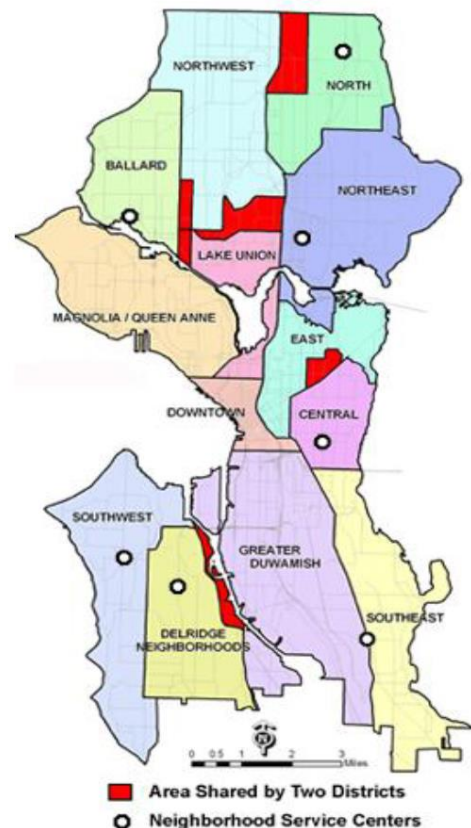
Appendix B: Meeting Notice(s)

City Surveillance Technology Fair

February 27, 2018
6:00 p.m. – 8:00 p.m.

Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

Join us for a public meeting to comment on a few of the City's surveillance technologies:

Seattle City Light
- Binoculars
- Sensorlink Ampstik
- Sensorlink Transformer Meter

Seattle Department of Transportation
- Acyclica

Seattle Fire Department
- Computer Aided Dispatch

Seattle Police Department
- 911 Call Logging Recorder
- Computer Aided Dispatch
- CopLogic

Can't join us in person?

Visit www.seattle.gov/privacy to leave an online comment or send your comment to **Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124.** The Open Comment period is from **February 5 - March 5, 2019.**

Please let us know at Surveillance@seattle.gov if you need any accommodations. For more information, visit Seattle.gov/privacy.

Surveys, sign-in sheets and photos taken at this event are considered a public record and may be subject to public disclosure. For more information see the Public Records Act RCW Chapter 42.56 or visit Seattle.gov/privacy. All comments submitted will be included in the Surveillance Impact Report.

Giám Sát Thành Phố Hội Chợ Công Nghệ

ngày 27 tháng 2 năm 2019
6 :00 giờ chiều – 8:00 giờ chiều
Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

Hãy tham gia cuộc họp công cộng cùng chúng tôi để nhận xét về một số công nghệ giám sát của Thành phố:

Seattle City Light
- Ống nhòm quan sát
- Sensorlink Ampstik
- Đồng hồ đo máy biến áp của Sensorlink

Seattle Department of Transportation (Sở Giao Thông Vận Tải Seattle)
- Acyclica

Seattle Fire Department (Sở Phòng Cháy Chữa Cháy Seattle)
- Hệ Thống Thông Tin Điều Vận Có Máy Tính Trợ Giúp

Seattle Police Department (Sở Cảnh Sát Seattle)
- Hệ Thống Ghi Âm Cuộc Gọi 911
- Hệ Thống Thông Tin Điều Vận Có Máy Tính Trợ Giúp
- CopLogic

Quý vị không thể tới tham dự trực tiếp cùng chúng tôi?

Hãy truy cập www.seattle.gov/privacy và để lại nhận xét trực tuyến hoặc gửi ý kiến của quý vị tới **Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124**. Giai đoạn Góp Ý Mở từ **Ngày 5 tháng 2 - Ngày 5 tháng 3 năm 2019.**

Vui lòng thông báo cho chúng tôi tại Surveillance@seattle.gov nếu quý vị cần bất kỳ điều chỉnh nào. Để có thêm thông tin, hãy truy cập Seattle.gov/privacy.

Các khảo sát, danh sách đăng ký và ảnh chụp tại sự kiện này được coi là thông tin công cộng và có thể được tiết lộ công khai. Để biết thêm thông tin, hãy tham khảo Public Records Act (Đạo Luật Hồ Sơ Công Cộng) RCW Chương 42.56 hoặc truy cập Seattle.gov/privacy. Tất cả các ý kiến đóng góp mà quý vị gửi đến sẽ được đưa vào Báo Cáo Tác Động Giám Sát.

Eksibisyon ng Teknolohiya Sa Pagmamatyag sa Lungsod
Pebrero 27, 2019
6:00 p.m. - 8:00 p.m.
Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

Samahan kami para sa isang pampublikong pagpupulong upang magbigay ng komento sa ilan sa mga teknolohiya sa pagmamanman ng Lungsod:

Seattle City Light
- Mga Binocular
- Sensorlink Ampstik
- Sensorlink Transformer Meter

Seattle Department of Transportation (Departamento ng Transportasyon ng Seattle)
- Acyclica

Seattle Fire Department (Departamento para sa Sunog ng Seattle)
- Pagdispatsa sa Tulong ng Computer

Seattle Police Department (Departamento ng Pulisya ng Seattle)
- Rekorder ng Pagtawag sa 911
- Pagdispatsa sa Tulong ng Computer
- CopLogic

Hindi kami masasamahan nang personal?

Bumisita sa www.seattle.gov/privacy upang mag-iwan ng online na komento o ipadala ang iyong komento sa **Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124.** Ang panahon ng Bukas na Pagkomento ay sa **Pebrero 5 - Marso 5, 2019.**

Mangyaring ipaalam sa amin sa Surveillance@seattle.gov kung kailangan mo ng anumang tulong. Para sa higit pang impormasyon, bumisita sa Seattle.gov/privacy.

Itinuturing na pampublikong rekord ang mga survey, papel sa pag-sign-in at mga larawan na makukuha sa pangyayaring ito at maaaring mapasailalim sa paghahayag sa publiko. Para sa higit pang impormasyon, tingnan ang Public Records Act (Batas sa Mga Pampublikong Rekord) RCW Kabanata 42.56 o bumisita sa Seattle.gov/privacy. Isasama ang lahat ng isinumiteng komento sa Surveillance Impact Report (Ulat sa Epekto ng Pagmamanman).

Feria de tecnología de vigilancia ciudadana

27 febrero de 2019
De 6:00 p. m. a 8:00 p. m.

Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

Acompáñenos en la reunión pública para dar su opinión sobre algunas de las tecnologías de vigilancia de la ciudad:

Seattle City Light
- Binoculars
- Sensorlink Ampstik
- Sensorlink Transformer Meter

Seattle Department of Transportation (Departamento de Transporte de Seattle)
- Acyclica

Seattle Fire Department (Departamento de Bomberos de Seattle)
- Computer Aided Dispatch

Seattle Police Department (Departamento de Policía de Seattle)
- 911 Call Logging Recorder
- Computer Aided Dispatch
- CopLogic

¿No puede asistir en persona?

Visite www.seattle.gov/privacy para dejar un comentario en línea o enviar sus comentarios a **Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124.** El período de comentarios abiertos es desde el **5 de febrero al 5 de marzo de 2019.**

Avísenos en Surveillance@seattle.gov si necesita adaptaciones especiales. Para obtener más información, visite seattle.gov/privacy.

Las encuestas, las planillas de asistencia y las fotos que se tomen en este evento se consideran de dominio público y pueden estar sujetas a la difusión pública. Para obtener más información, consulte la Public Records Act (Ley de Registros Públicos), RCW capítulo 42.56, o visite Seattle.gov/privacy. Todos los comentarios enviados se incluirán en el Informe del efecto de la vigilancia.

Kormeerida Bandhigga Tiknoolajiyada ee Magaalada
Feebaraayo 27, 2019
6:00 p.m. - 8:00 p.m.
Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

Nagulasoo biir bandhigga dadweynaha si fikir looga dhiibto dhawr kamid ah aaladaha tiknoolajiyada ee City surveillance:

Seattle City Light
- Binoculars
- Sensorlink Ampstik
- Sensorlink Cabiraha mitirka Gudbiyaha

Seattle Department of Transportation
(Waaxda Gaadiidka ee Seattle)
- Acyclica

Seattle Fire Department
(Waaxda Dab damiska ee Seattle)
- Adeeg Qaybinta Kumbuyuutarka loo adeegsado

Seattle Police Department
(Waaxda Booliiska ee Seattle)
- Qalabka Duuba Wicitaanada 911
- Computer Aided Dispatch
- CopLogic

Nooguma imaan kartid miyaa si toos ah?

Booqo barta www.seattle.gov/privacy si aad fikirkaaga oonleen ahaan uga dhiibato
Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124.
Mudada Fikrad Dhiibashadu furantahay waxay kabilaabanaysaa
Feebaraayo 5 - Maarso 5, 2019.

Fadlan noogusoo gudbi ciwaankaan Surveillance@seattle.gov hadaad ubaahantahay hooy laguusii qabto. Wixii macluumaad dheeri ah, booqo Seattle.gov/privacy.

Xog aruurinada, waraaqaha lasaxixaayo iyo sawirada lagu qaado munaasabadaan waxaa loo aqoonsanayaa diiwaan bulsho waxaana suuragal ah in bulshada lagu dhex faafiyo. Wixii macluumaad dheeri ah kafiiri Public Records Act (Sharciga Diiwaanada Bulshada) RCW Cutubkiisa 42.56 ama booqo Seattle.gov/privacy. Dhammaan fikradaha ladhiibto waxaa lagusoo darayaa Warbixinta ugu danbaysa ee Saamaynta Qalabka Muraaqabada.

도시 감시 기술 박람회

2019 년 2 월 27 일
오후 6:00 – 오후 8:00

Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

공개모임에 참여하시고, 도시 감시 기술과 관련한 의견을 공유해 주십시오.

Seattle City Light
- 쌍안경
- Sensorlink Ampstik
- Sensorlink 변압기 미터

Seattle Department of Transportation(시애틀 교통국)
- Acyclica

Seattle Fire Department(시애틀 소방국)
- 컴퓨터 지원 출동 지시

Seattle Police Department(시애틀 경찰국)
- 911 전화 기록 녹음기
- 컴퓨터 지원 출동 지시
- CopLogic

현장 참여가 어려우신가요?

www.seattle.gov/privacy 를 방문하셔서 온라인 의견을 남기시거나 Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124 로 의견을 송부해 주시기 바랍니다. 공개 의견 수렴 기간은 2019 년 2 월 5 일 – 3 월 5 일입니다.

편의사항이 필요하신 경우 Surveillance@seattle.gov 로 문의해 주시기 바랍니다.
자세한 정보는 Seattle.gov/privacy 를 참조해 주십시오.

본 행사에서 수집된 설문 조사, 참가 신청서 및 사진은 공개 기록으로 간주되며 일반에 공개될 수 있습니다. 자세한 사항은 Public Records Act(공공기록물법) RCW 챕터 42.56 을 참조하시거나, Seattle.gov/privacy 를 방문하시기 바랍니다. 제출된 모든 의견은 감시 영향 보고서에 수록됩니다.

城市監視
技術展覽會
2019 年 2 月 27 日
下午 6:00 至下午 8:00
Bertha Knight Landes Room, 1st Floor City Hall
600 4th Avenue, Seattle, WA 98104

City of Seattle

加入我們的公眾會議，留下您對紐約市監視技術的意見：

Seattle City Light
- 望遠鏡
- Sensorlink Ampstik
- Sensorlink 變壓器表

Seattle Department of Transportation（西雅圖交通局）
- Acyclica

Seattle Fire Department（西雅圖消防局）
- 電腦輔助發送

Seattle Police Department（西雅圖警察局）
- 911 通話紀錄錄音機
- 電腦輔助發送
- CopLogic

無法親自前來？

造訪 www.seattle.gov/privacy 發表線上評論或將您的意見傳送至 Surveillance and Privacy Program, Seattle IT, PO Box 94709, Seattle, WA 98124。開放評論期：2019 年 2 月 5 日至 3 月 5 日。

如果您需要任何便利服務，請透過 Surveillance@seattle.gov 聯絡我們。要獲得更多資訊，請造訪 Seattle.gov/privacy。

此次活動中的調查、簽入表和照片被視為公共紀錄，可能會被公開披露。有關更多資訊，請查閱 Public Records Act（資訊公開法）RCW 第 42.56 章或造訪 Seattle.gov/privacy。提交的所有意見都將包含在監視影響報告內。

Appendix C: Meeting Sign-in Sheet(s)

City of Seattle

Neighborhood
- ☐ Ballard
- ☐ Belltown
- ☐ Beacon Hill
- ☐ Capitol Hill
- ☐ Central District
- ☐ Columbia City
- ☐ Delridge
- ☐ First Hill
- ☐ Georgetown
- ☐ Greenwood / Phinney

- ☐ International District
- ☐ Interbay
- ☐ North
- ☐ Northeast
- ☐ Northwest
- ☐ Madison Park / Madison Valley
- ☐ Magnolia
- ☐ Rainier Beach
- ☐ Ravenna / Laurelhurst
- ☐ South Lake Union / Eastlake

- ☐ Southeast
- ☐ Southwest
- ☐ South Park
- ☐ Wallingford / Fremont
- ☐ West Seattle
- ☐ King county (outside Seattle)
- ☒ Outside King County
- ☐ Prefer not to identify

Race/Ethnicity
- ☐ American Indian or Alaska Native
- ☒ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or other Pacific Islander
- ☒ White
- ☐ Prefer not to Identify

Age
- ☐ Under 18
- ☒ 18-44
- ☐ 45-64
- ☐ 65+
- ☐ Prefer not to identify

Gender
- ☐ Female
- ☒ Male
- ☐ Transgender
- ☐ Prefer not to identify

Neighborhood
- ☐ Ballard
- ☐ Belltown
- ☐ Beacon Hill
- ☐ Capitol Hill
- ☐ Central District
- ☐ Columbia City
- ☐ Delridge
- ☐ First Hill
- ☐ Georgetown
- ☐ Greenwood / Phinney

- ☐ International District
- ☐ Interbay
- ☐ North
- ☐ Northeast
- ☐ Northwest
- ☐ Madison Park / Madison Valley
- ☐ Magnolia
- ☐ Rainier Beach
- ☐ Ravenna / Laurelhurst
- ☐ South Lake Union / Eastlake

- ☐ Southeast
- ☐ Southwest
- ☐ South Park
- ☐ Wallingford / Fremont
- ☐ West Seattle
- ☒ King county (outside Seattle)
- ☐ Outside King County

Race/Ethnicity
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White
- ☐ Prefer not to Identify
- ☐ Include Middle Eastern

Age
- ☐ Under 18
- ☒ 18-44
- ☐ 45-64
- ☐ 65+
- ☐ Prefer not to identify

Gender
- ☒ Female
- ☐ Male
- ☐ Transgender
- ☐ Prefer not to identify

Neighborhood

☐ Ballard
☐ Belltown
☒ Beacon Hill
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☐ Central District
☐ Columbia City
☐ Delridge
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☐ Interbay
☐ North
☐ Northeast
☐ Northwest
☐ Madison Park / Madison Valley
☐ Magnolia
☐ Rainier Beach
☐ Ravenna / Laurelhurst
☐ South Lake Union / Eastlake

☐ Southeast
☐ Southwest
☐ South Park
☐ Wallingford / Fremont
☐ West Seattle
☐ King county (outside Seattle)
☐ Outside King County
☐ Prefer not to identify

Race/Ethnicity

☐ American Indian or Alaska Native
☐ Asian
☒ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or other Pacific Islander
☐ White
☐ Prefer not to Identify

Age

☐ Under 18
☒ 18-44
☐ 45-64
☐ 65+
☐ Prefer not to identify

Gender

☒ Female
☐ Male
☐ Transgender
☐ Prefer not to identify

Neighborhood

☐ Ballard
☐ Belltown
☐ Beacon Hill
☐ Capitol Hill
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☐ Delridge
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☐ Rainier Beach
☐ Ravenna / Laurelhurst
☐ South Lake Union / Eastlake

☐ Southeast
☐ Southwest
☐ South Park
☐ Wallingford / Fremont
☒ West Seattle
☐ King county (outside Seattle)
☐ Outside King County
☐ Prefer not to identify

Race/Ethnicity

☐ American Indian or Alaska Native
☐ Asian
☒ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or other Pacific Islander
☐ White
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Age

☐ Under 18
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☐ 65+
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Gender

☐ Female
☒ Male
☐ Transgender
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Race/Ethnicity
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- ☐ Hispanic or Latino
- ☐ Native Hawaiian or other Pacific Islander
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- ☐ Prefer not to Identify

Age
- ☐ Under 18
- ☐ 18-44
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Gender
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- ☑ 45-64
- ☐ 65+
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Age

- ☐ Under 18
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- ☐ 65+
- ☐ Prefer not to identify

Gender

- ☑ Female
- ☐ Male
- ☐ Transgender
- ☐ Prefer not to identify

Neighborhood

☐ Ballard	☐ International District	☐ Southeast
☐ Belltown	☐ Interbay	☐ Southwest
☐ Beacon Hill	☐ North	☐ South Park
☐ Capitol Hill	☐ Northeast	☐ Wallingford / Fremont
☐ Central District	☐ Northwest	☑ West Seattle
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☐ Delridge	☐ Magnolia	☐ Outside King County
☐ First Hill	☐ Rainier Beach	
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☐ Greenwood / Phinney	☐ South Lake Union / Eastlake	

Race/Ethnicity

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☐ Hispanic or Latino
☐ Native Hawaiian or other Pacific Islander
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☐ Prefer not to Identify

Age

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☑ 18-44
☐ 45-64
☐ 65+
☐ Prefer not to identify

Gender

☐ Female
☑ Male
☐ Transgender
☐ Prefer not to identify

Neighborhood

☑ Ballard	☐ International District	☐ Southeast
☐ Belltown	☑ Interbay	☐ Southwest
☐ Beacon Hill	☐ North	☐ South Park
☐ Capitol Hill	☐ Northeast	☐ Wallingford / Fremont
☐ Central District	☐ Northwest	☐ West Seattle
☐ Columbia City	☐ Madison Park / Madison Valley	☐ King county (outside Seattle)
☐ Delridge	☐ Magnolia	☐ Outside King County
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Age

- ☐ Under 18
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- ☐ 45-64
- ☐ 65+
- ☐ Prefer not to identify

Gender

- ☐ Female
- ☑ Male
- ☐ Transgender
- ☐ Prefer not to identify

_2_

Queen Anne

Neighborhood

- ☐ Ballard
- ☐ Beacon Hill
- ☐ Belltown
- ☐ Capitol Hill
- ☐ Central District
- ☐ Columbia City
- ☐ Delridge
- ☐ First Hill
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Race/Ethnicity

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- ☐ Under 18
- ☐ 18-44
- ☐ 45-64
- ☒ 65+
- ☐ Prefer not to identify

Gender

- ☒ Female
- ☐ Male
- ☐ Transgender
- ☐ Prefer not to identify

Neighborhood

☐ Ballard
☐ Belltown
☐ Beacon Hill
☐ Capitol Hill
☐ Central District
☐ Columbia City
☐ Delridge
☐ First Hill
☐ Georgetown
☐ Greenwood / Phinney

☑ International District
☐ Interbay
☐ North
☐ Northeast
☐ Northwest
☐ Madison Park / Madison Valley
☐ Magnolia
☐ Rainier Beach
☐ Ravenna / Laurelhurst
☐ South Lake Union / Eastlake

☐ Southeast
☐ Southwest
☐ South Park
☐ Wallingford / Fremont
☐ West Seattle
☐ King county (outside Seattle)
☐ Outside King County

Race/Ethnicity

☐ American Indian or Alaska Native
☐ Asian
☑ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or other Pacific Islander
☐ White
☐ Prefer not to Identify

Age

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Appendix D: Department of Neighborhood Focus Group Notes

Friends of Little Saigon (FOLS)

Please select which technology you wish to comment on:

☐ SCL: Binoculars   ☐ SCL: Sensorlink Transformer Meter (TMS)   ☐ SFD: Computer-Aided Dispatch   ☐ SPD:9-11 Call Recorder

☐ SCL: Sensorlink Ampstik   ☐ SDOT: Acyclica   ☐ SPD: Computer-Aided Dispatch   ☒ SPD: CopLogic

What concerns, if any, do you have about the use of this technology?

- Will they keep the data safe on coplogic?
- Can it be hacked?
- What if you report your neighbour and your neighbour hacks the system and find out?
- What is the money amount limit for coplogic / Why is there a limit for coplogic?: (a community member says that she believes that the limit $500 or under, but it's hard to have a limit because a lot of packages cost more than $500 such as electronics get stolen and you won't be able to report it online)
- The departement is having all these technologies being used but not letting the public aware of it
- Coplogic is not clear and is confusing to use (what you can report and what you can't report)
- If coplogic is known by the community would they use it ? (Community members agreed that no one would use coplogic because it's not in Vietnamese. Not even people who speak english fluently even use it.
- Many community members don't trust the system)

What value, if any, do you see in the use of this technology?

- Coplogic has been going on for a few years it's not very effective. The only effective thing is that coplogic is doing saving police hours and time.

What do you want City leadership to consider about the use of this technology?

- Most of the time, our community don't report things because they don't trust the system, they often tell someone that they trust a friend. Is there an option that someone and report a crime for someone else?

Other comments:

- The government should be more transparent with the technology system with the public.
- The translation is much far removed from the actual Vietnamese language.

- The translation is very hard to understand, the language is out of context (The flyer is poorly translate)
- Is there resources to support these technologies? Is there translations so that it is accessible for everyone? Will this accommodate everyone?
- Police should have a software that connects them to translation and interpretation right away instead of having to call a translator
- How will other people know of the technology if they can't come to focus group meetings? Such as flyers? Social media? Etc.
- Besides face to face meetings, are there plans to execute this information of the technology and surveillance to the community?
- Will the City of Seattle go to community events, temple, the church to reach out to the community and explain the technologies?
- These technologies are taking a part of our taxes, so everyone should know. It should be for everyone to know, not only catered to one group or population.

Are there any questions you have, or areas you would like more clarification?

- How effective are the tools/technology?
- How many people know of these technologies? Provide statistics
- What are the statistics of the coplogic?
- What is the data and statistics for coplogic and what are people reporting?
- What is the most common crime that they are reporting?
- And how effective is coplogic based on the statistics and data?

Friends of Little Saigon (FOLS)

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What concerns, if any, do you have about the use of this technology?

- CAD did not work from experience. A community member said that they reported that they needed assistance at 10:00pm and no one showed up, then had to call 911 at 12:00am and someone finally showed up at 4:30am
- Why create more options and technologies if the police department and government can not support it? It's a waste of time and money (taxes). Should have enough personals before they implement technology.
- Government should have enough personals to support translation if they choose to translate.

What do you want City leadership to consider about the use of this technology?

- The city should focus on having the community review the technologies that are yet to be implemented.
- The Vietnamese community is not getting the information we need to report crimes

Other comments:

- Engagement is very important. Engaging the community and engaging different demographics.
- Friday night, Saturdays, and Sunday afternoon work the best for the Vietnamese community.
- If the city wants to involve the vietnamese community and engage the Vietnamese community, it is important to accommodate with our community It is important to proofread the translation, have 3 people proofread. Someone
  pre 1975, post 1975 and current Vietnamese language. The government clearly does not proofread the translation.

Council on American Islamic Relations, Washington (CAIR-WA)

Focus Group with Council on American-Islamic Relations, Washington
Thursday, Feb. 21, 2019
Technology Discussed: CopLogic

1. Do you have concerns about this specific technology or how it's used?
   - Having used the system myself the one thing I noted was the type of report you can file, they ask questions like if you knew the suspect, and if you're saying no I don't know who did it. and you check a box that says I understand that no one is going to investigate this
     - What is the point of having a system in place than If no one is going to investigate it
     - It is for common things like my car is broken into and stuff was taken out of my car, you can file it if you need a report for insurance. But if you were to call that and report to the police, they wouldn't come for days
   - So for example if I can be a straight up Islamophobe and I can see a Muslim woman and make a bunch of false reports online, and how long would it take for someone to say I see you making all these reports. Because people can make so many different reports, how do you deal with that
     - There are very limited types of reports that it will accept. So if someone wanted to report graffiti and they were reporting more hate crime related graffiti an officer will review the report
     - So I think the review process would be really important
   - Another barrier is that it's an online system so we need to think about wifi access and there is this assumption that everyone has access to internet and computers. And what I'm hearing is that people can just file a report at a click of their finger. And if these people can do that on their computer what stops them from being able to file all these cases about certain groups and individuals.
   - Additional there have been cases in the past where people are abusing reporting system. This one doesn't allow you to report against known suspect but I could see that happening in the future so I wanted that to be mentioned. The other thing under protection is says all activity can be stored and the data Is monitored by lexis nexus… and this company does a lot of research on crime mapping which brings up some of the concerns on like CVE
     - But what you are saying is that lexis nexus does other mapping that it can use this information for
     - Yes, because I want to clarify what is the technological ambition of SPD because I don't think this would work well in the communities that SPD is supposed to served. And I would want a contract review of what lexis nexus does. Will the info stay on the data and server of lexis nexus, what happens to it
   - Another thing is has SPD given Lexis nexus to use this in any of the research data they do, because they put out a lot of information regarding mapping, and crime control. And what information are they allowed to take
   - We have seen recently people doing interesting things when reporting crimes. I think its important to realize that when reporting crime people have a different perception when reporting crime. People will see you in a certain neighborhood and might think they stole that car, or are doing something bad here. So when we give people the ability to

report online we need to be concerned with accessibility about people being able to report freely… and we saw for a year that if an African American person came to use a swimming pool someone can call and say they don't live here. I think SPD is trying alleviate some of those calls they are getting, but I don't think this is the solution to the problem

- o What is the logic behind this overall, because is seems like it presents more cons than pros, and what is analytics database you use to look at these reports. Because when I am using government data base I can see where I need more surveillance etc. so we are getting all these open wholes in the system. Is this a right wing Donald trump agenda to watch neighbors of color and surveillance
- o I think im more concerned with where does this information end up and how is it used
- o What is the usefulness of the information that is not followed up on. And how does it help the people it's actually serving? So for example someone works for an anti-Muslim white supremacy group and they have people in different areas report issues about different Muslim groups in Seattle how do you prove the validity of these information and make sure they aren't just causing harm

2. What value do you think this brings to our city?
    - • I think technology saves time, money, makes filing a report easy, I had to do that once it takes a lot of time.
    - • I appreciate that it is easier so something like a hit or run or a car breaking in, that's fine.
3. What worries you about how this is used?
    - • The only issues I can think of right now is it seems like it would be very easy to make a fraudulent report or a report that is for a small thing that you can make into a big thing, like the things you see go viral on the internet. So now it seems like the barrier to making a police report is smaller
    - • I agree I think the bar is lowered and different people are perceived differently. And we have seen how SPD criminalizes different communities for behaviors that don't need to be criminalizing
    - • A lot of different kinds of reports have to do with peoples perceived notion, so my concern comes from how do we make sure that this kind of technology isn't used to map our where Muslims live/are, and there types of religious belief. Or isn't being used to monitor them. How do we ensure that this isn't used to map our communities
    - • The only comment I have that in the forms I have filled out is it won't allow you to fill out the form if you are naming a specific individual, you can name a group, but a not a person. The following criteria is there no known suspects, it happens in Seattle, so things like thefts. So you can report, graffiti, identity theft, credit card fraud, simple shop lift. So when I click report it says if you have a suspect it says please call. And when I press report it allows me to report anonymously, so I could report against a community with no follow up
        - • Well that doesn't stop them from targeting al-Noor masjid, or Safeway in new holly, or new holly gathering hall, and it can target the people in that community. And people don't feel comfortable with increase police presences, so it targets area if not targeting people
    - • When I was buying the house in Dallas (participant currently still lives/works/plays in Seattle) one of the first things I did was looking at a crime map and based off of that if someone is making a lot of reports can that be used for crime mapping because than

that can lower the property value. And if the police isn't following up then how is it being used

- Its definitely possible for people to report inaccurate information

4. What recommendations would you give policy makers at the City about this technology?
    a. But my concern is reporting someone that can really target people of color. And that happens much more threatening to people. So the concept of an upset black women is more intimidating than an upset women that is another race and how many times will behavior like that be reported. Or how many times will a black man be reported against because it seems scary. So I think it lowers the bar when you don't have to talk to an individual when you don't have to talk to a police
    b. My questions are, how accessible are cop logic to people who don't read or speak English. How is SPD going to do what they can to make sure that this doesn't negatively impact communities they are already having issues with like the Sea Tac community that already feels threaten and criminalized by communities.

5. Can you imagine another way to solve the problem this technology solves?
    - So the SPD is very data driven these days and the one thing we repeat is report report report, call 911 and report online whatever you thinking is happening because all of that goes into their data base and is used for them to use resources and put police based off of where there is more crime. The report report report mentality assumes there are good relationships between the community and police, so even if someone doesn't do something bad, I don't know that they would feel comfortable reporting, even if online
    - From the community I have come from I am almost certain that they haven't even used online reporting so how do we make sure that we are giving everyone access to use online reporting. And there are certain crimes that are so common in areas that they don't even report it because they think the police should already know about it
    - I think the department should solely rely on the technology only as a way of collecting info they should still use in personal resources to actively participant in local community and make connections you can't rely only on this technology alone to do this

6. Other comments
    a. Also in this day in age we need to consider that immigration is a issue, and this administrative has blended the different agencies so people have a hard time knowing where SPD starts and ICE starts and those lines have been blurred and that is a real concern for many families

Council on Islamic Relations, Washington (CAIR-WA)

Focus Group with Council on American-Islamic Relations, Washington

Thursday, Feb. 21, 2019

Technology Discussed: Binoculars/Spotting Scope

1. Do you have concerns about this specific technology or how it's used?
   - People in our community don't have the access to say or be apart of these conversation. A lot of these people are literate, and might not have the same cultural values. For Muslim women there are a type of consent that you have when you walk outside and are covered in a certain away versus when you are in the privacy of your own home. And people might not have that cultural and religious awareness
   a. I had one quick concerns, as far as the data that is collected using these binoculars, who has access to it
      - Seattle City Light: Information goes into the billing system, which customers can access if they have the automated reader but do not have access to under the current system
   - I know the focus is on binoculars but my mind is on new technologies and when people who are consumers and feel like I am overcharged how do I follow up and get those issues resolved. For systems that are completed based off of technologies how will I know if that data is being altered.
   b.
2. What value do you think this brings to our city?
   - I would just add this is more my general comments I think its good that Seattle city lights is providing notifications to people when this is happening. Are they wearing something visible that show people they are from Seattle city lights? And is there a way for people to complain?
      - Yes they are wearing vests that are very visible. Yes we have a couple different avenues the easiest is to call the customer service line and to submit a complaint there
3. What worries you about how this is used?
   - My primary concerns on my end is if someone is looking into my home with binoculars its a privacy concern. Most Muslim women wear hijab and I don't feel comfortable if someone is using binoculars looking from the outside when we are not wearing the hijab. My concern is that it is a huge invasion of privacy
   a. I have a question as the women expressed the feeling of people reading the meters with binoculars, if the meter has abnormal behavior or is in a different place of the house. Have there been situations where someone sees the person looking at someone house with binoculars, and they might not have gotten notified. Or the meter might be on the opposite side of where they are looking. Are they getting background checks? Or are complaints being followed up
      - Seattle City Light: Yes all city employees have background checks, and if a complaint gets called in they will go through disciplinary actions

- What are the average times for disciplinary actions. How long is the process for a full investigation
- Seattle City Light: It's a multiple step process in terms of different levels. There are warnings, and if there was undo actions. Timeline really depends, I'm not sure
- Cause I think that people who go through the different nuances of how privacy can be breach that is just the end all be all of how privacy can breach so I think there needs to be policy put in place so that people don't have their privacy breach and they are being monitored by a pedophile

4. What recommendations would you give policy makers at the City about this technology?
    - When I look at the Seattle city of light they do a lot of estimated guesses and as a consumer they might give you a $500 fee based off of the estimated guesses so I think it is important to have some sort of device that better clearly shows how much you use

5. Can you imagine another way to solve the problem this technology solves?
    - My other question is if its actually not efficient why do you get the option to opt out (of the new automated system). If there is an old school way of doing it that involves a breach of privacy because these are human beings using the binoculars, so If this other option is better why are people having the ability to opt out.

6. Other comments: (Many comments were discussed over Seattle City Light's upcoming change from binocular use to automated meter readers)
    - Who opted out was it home owners?
    a. When we go to a place with 12 tenements do all 12 of them have the ability to opt out or in, or just the owners of the building?
    b. Each home owner has a schedule provided to them and it is a 3 day period which they can come in and look at the system
    c. Is there a cost to them to have the new meter.
        - Seattle City Light: There is no cost with getting the new meter, but there is still a cost If we have to send someone out there to read it
        - What I don't understand is why the new practice is not to just use the new system since that is more accurate and it is doesn't require binoculars
        - What is the cost of opting out
        - Seattle City Light: There is a flat rate
    - I was gonna reiterate when we talk about equity and equitable practices. You can opt out (of the automated system) but there is a fee. And it makes me think how much of It is a choose if one of these you have to pay for and the other one is free. So that sounds a little problematic when looking at choices of equity. I think choices are great, but also people need to be well informed. Like people

within the community need to have more clear information to make the best decision for themselves

- Going back to people who make the decision. I want the person who are living in the house to know what decision is being made. So not just the person who owns the house, but the person living in the home. And not everyone it literate and not everyone speaks English. And its really important that you are giving them information they can actually consume. Instead of giving them notices they cant read

Council on Islamic Relations, Washington (CAIR-WA)

Focus Group with Council on American-Islamic Relations, Washington
Thursday, Feb. 21, 2019
Technology Discussed: Acyclica

1. Do you have concerns about this specific technology or how it's used?
   - Where does this data go? Does it go to SDOT? Google maps?
   - My other question is, it said whatever is being transferred is encrypted. All encrypted means to me is getting data from one device to another will be transferred without it being intercepted. What I don't know is, how much information are people getting
   - My concern is related to data, yeah we like to use gps. But what is the perimeter, what is the breach of access. Where is the data being used, and what can that turn into. we might be okay if the data is only being used for traffic related updates, but they might use it for more
   - I also would like to see how acyclica actually does what they do. They are using a lot of words that normally don't know. So I want to know how exactly they are hashing and salting. So for them to be clear about how they doing it. like when whatsapp encrypted they didn't give us the exact code but told us how they are doing it
   - Asking for a greater transparency for how they are doing this
   - I think the purpose of it is really important but the biggest concern is collecting all of this information without consent of passersby.
   - So the specific identifier that acyclica uses it mac addresses? You could potentially use that number to track that phone for the lifetime of the phone, for as long as that phone is on and being used. And that is very concerning.
   - Also I want to understand more where is this data going, and I want to know if this data is going to be used for future projects.
   - I want to ask is this something people opt into
   - People don't even know this is being used

2. What value do you think this brings to our city?
   - I like getting places and I like getting traffic information.
3. What worries you about how this is used?
   - What I don't like is you using my phone to get that information. I want whatever is in my cellphone to be protected. And I wanna know what you can access
   - I think based on Seattle and Seatac's higher up wanting to monitor and map out Muslims and where they are, and I don't like people being able to use our phone to track our location or actions they might think is violent. So based off of Seattle's track record and law enforcement agencies I don't like it
   - People who live outside of Seattle are also being impacted by it anytime they drive in Seattle
   - Could someone "opt out" by having wifi disabled on their device? I don't know if this covers cell towers. Because if it covers cell towers the only thing you could is having your phone on airplane mode

4. What recommendations would you give policy makers at the City about this technology?

- I think the big question is why aren't we using other vendors, like I mentioned google maps, or waze, in fact komo 4 uses ways. Where other options we're looked at, and what were the trade off there's. And I want to see some transparency between the decision-making processes
- I don't think this data should be shared with other private agencies, or other interagency programs
- If all you're looking at is traffic flow, why are you not using the sensors in the road to give traffic flow updates.
-
5. Can you imagine another way to solve the problem this technology solves?
    - I don't know if this already exists but something that makes it that data can't be used from one technology and use it for a different purposes
    - I think speaking from an industry perspective that is really important to have a processes for. Because all of this data is being used regardless of if you live in Seattle, or people live in different countries even who are visiting. That data is being collected. My understanding is that SDOT doesn't get the data directly. So my concern is how long can acyclica keep this data, use this data. Why wasn't a different option used, one in which some sort of consent can be used, so something like waze, google maps where people can opt in can get that information.
    - Road sensors or ways to count cars
    - I think its better to count cars than phones, because there is some expectation that your car will be monitored.
    - Using vehicle level granularity

Entre Hermanos

Please select which technology you wish to comment on:

☐SCL: Binoculars   ☐SCL: Sensorlink Transformer Meter (TMS)   ☐SFD: Computer-Aided Dispatch   ☐SPD:9-11 Call Recorder

☐SCL: Sensorlink Ampstik   ☒SDOT: Acyclica   ☐SPD: Computer-Aided Dispatch   ☐SPD: CopLogic

1) What concerns, if any, do you have about the use of this technology?

El uso de wifi en Acyclica porque pueden obtener toda la información de los teléfonos.

Si vale la pena la inversión

Enfocando al grupo: La tecnología ya está instalada. que les preocupa de su uso?

> El tráfico sigue igual.

> Quien usa o almacena la información.

> La preocupación es la colección de data.

Colección y almacenamiento de información es la mayor preocupación.

No es la colección de data lo alarmante sino los recursos (dinero utilizado) ya que o la tecnología no están funcionando porque el tráfico sigue igual. No hay cambio con la nueva tecnología, esos gastos no son válidos ya que no hay resultados. Esos gastos pudieran ser utilizados para la comunidad.

También tienen que ver si la tecnología emite radiación o alguna otra cosa dañina; perjudicial a la salud.

El gobierno tiene todos los datos.

No necesitan esta tecnología para tener los datos porque ya existen métodos para eso, incluso aplicaciones o alguna otra cosa.

La otra preocupación del grupo es que no haya un cambio al problema que se quiere resolver. En el caso de Acrylica sería el mejorar el tráfico.

• Tecnologías como esta necesitan recolectar más opiniones de expertos.

• Sería bueno que la información sea compartida con la comunidad. (Transparencia en fines y objetivos de la tecnología y datos guardados, tácticas implementadas.)

2) What do you want City leadership to consider about the use of this technology?

Hay lugares donde no se necesitan. En algunas partes de Magnolia, Queen Anne, Northgate, no se ocupan.

Seguimiento de pregunta: En las comunidades donde viven los latinos que tanto se ocupa Acyclica?

Participante no cree que allí se ocupan.

Hablaron sobre la necesitad de puntos estratégicos y calles con más necesidad de ayuda por causa del tráfico.

What do you think about this technology in particular ?

Bien, la tecnología ayuda con la velocidad o el movimiento de los coches.

La información se guarda y analizan por donde viajas o cuantas veces cruzas este rastreo.

Si es solo para ver el tráfico está bien.

Está bien en algunas partes. Puede que sea algo bueno. Pero puede que esta tecnología pueda compartir información personal que puede ser utilizada de otra forma en especial si hay Hacking (forma negativa, uso de datos).

La tecnología en sí no es tan grande (de tamaño) para ser algo visualmente desagradable. La información captada a través de estos medios puede que ayude a conducir el tráfico de mejor manera pero también puede que tome información personal.

Are there any questions you have, or areas you would like more clarification? ●

La tecnología no es un router, sino colección de data para planeaciones urbanas.

Participante: "quiero creer" "convencerme" que los sensores están allí para ayudar con el tráfico.

No se sabe cuándo las instalaron, los resultados deberían de ser públicos. Si la tecnología es para aliviar el flujo de tráfico entonces por qué no extienden el programa? O por qué no hay mejoramiento del tráfico?

Alternatives to this technology

- Alguna pantalla que indique cuáles vías son alternativas puede reemplazar esto.

- Cambios al límite de velocidad puede que alivie el flujo del tráfico.

- Dejar de construir tanto.

- Rediseño de calles ayudaría flujo de tráfico.

- El rediseñar las vías servirá para las futuras generaciones.

Entre Hermanos

Please select which technology you wish to comment on:

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☐SCL: Sensorlink Ampstik   ☐SDOT: Acyclica   ☐SPD: Computer-Aided Dispatch   ☐SPD: CopLogic

1) What concerns, if any, do you have about the use of this technology?

Los binoculares son preocupantes si la persona no tiene ética. Es preocupante que una persona vea a través de binoculares a que una tecnología mida el uso de la electricidad

Al grupo le incomoda el uso de binoculares

Sensorlynk específicamente la preocupación sería que le quita el trabajo a una persona.

Si es para detectar robo el grupo cree que hay otras maneras de saber quien roba

que no tan solo será para leer la electricidad sino para obtener otros tipos de información si cámaras   fueran usadas

2) What value, if any, do you see in the use of this technology?

Ahorro de energía

Record y datos mas precisos

Oportunidad de trabajo a quien utiliza los binoculares

Estabiliza los precios de la electricidad

3) What do you want City leadership to consider about the use of this technology?

: Usar background check, uso de uniforme por trabajadores, cámara en binoculares.

What do you think about this technology in particular ?

Sensorlink Si

Binoculares son invasivos

Are there any questions you have, or areas you would like more clarification? ●

La confianza en estos medidores serán confiables? Serán efectivos?

El uso de binoculares se puede acompañar de una cámara añadida

Alternatives to this technology

Un tipo de escáner en los medidores de energía. Poner sensores en un poste de luz para grabar solo la data/información de electricidad

Entre Hermanos

Please select which technology you wish to comment on:

☐SCL: Binoculars   ☐SCL: Sensorlink Transformer Meter (TMS)   ☐SFD: Computer-Aided Dispatch   ☐SPD:9-11 Call Recorder

☐SCL: Sensorlink Ampstik   ☐SDOT: Acyclica   ☐SPD: Computer-Aided Dispatch   ☒SPD: CopLogic

1) **What concerns, if any, do you have about the use of this technology?**

Las fallas electrónicas son preocupantes especialmente en reportes policiacos.

Las preocupaciones es que el reporte no salió, no llegó por cualquier razón.

No todos podrán o saben usar las computadoras.

Fallas de los algoritmos de cada demanda es alarmante.

Que y cuando determina la urgencia de respuesta

Las personas le temen a los policías. Y este medio puede ayudar a que el miedo disminuya.

La elección automática de cada caso o la manera en que la persona escribió el reporte y la manera en que la computadora lo entendió es alarmante.

2) **What value, if any, do you see in the use of this technology?**

La elección automática de cada caso o la manera en que la persona escribió el reporte y la manera en que la computadora lo entendió es alarmante.

El uso de computadora está bien para las denuncias.

Si personas usan esta tecnología y es analizada en tiempo real por otras personas no hay problema.

Es otro método para denunciar

Está de acuerdo con el uso de computadoras para denunciar solo que no todos son capaz de usar   este método/tecnología.

3) What do you want City leadership to consider about the use of this technology?

Que sea multi-idioma, implementar audio, implementar sistemas que ayuden a múltiples personas con diversas capacidades/necesidades

Si es usada de manera adecuada y como han dicho está bien.

El uso de la tecnología es bueno para dar respuesta para todas las cosas y personas

What do you think about this technology in particular ?

Grupo están de acuerdo con su uso.

Puede salvar una vida.

Los riesgos y acciones determinan la urgencia de la intermisión policiaca.

Alguna gente se siente más capaz de presentar una queja a través de este sistema, la tecnología en uso tiene validez.

Bueno para la violencia doméstica.

Are there any questions you have, or areas you would like more clarification?

La computadora decidirá la importancia/urgencia del reporte/emergencia dando a llevar acciones de emergencia.

Gravedad de emergencia es determina por tecnología.

La definición de emergencia es diferente con cada persona.

Cada uno tiene la definición de vigilancia, pero ¿que tal la definición de emergencia?

SITUATIONS TO APPLY ITS USE

Una pelea en la calle, un malestar corporal, cuestiones de vida, abuso doméstico

Si nos basamos en la definición de emergencia sólo en cuanto estemos en peligro inmediato o en tiempos mínimos/ de transcurrencia alarmante/peligrosa el uso de será implementado o limitado solo a instantes inmediatos de peligro.

Para reportar algo que ya sucedió o que son recurrentes.

Basado en el concepto de emergencia, las personas pueden tomar el método adecuado para reportar su caso y a través del medio necesario.

Los reportes no son anónimos.

Los datos son recolectados aun, a pesar de la opción escogida.

Alternatives to this technology

Un tipo de escáner en los medidores de energía. Poner sensores en un poste de luz para grabar solo la data/información de electricidad

Entre Hermanos

City of Seattle
Surveillance

Inicio

Resumen: El departamento de vecindarios quiere saber la opinión de este grupo. Ellos verán videos de un minuto y medio y encontrarán folletos en sus mesas donde encontraran más información sobre lo visto.

Demográficos:

Ocho personas participaron, una de West Seattle, una de First Hill, dos de Ravenna/Laurelhurst y cuatro de King County (outside Seattle).

Cuatro personas se consideraron hispano o latino, una como india americana o nativa de Alaska, y tres no opinaron.

Cinco personas marcaron 18-44 como su rango de edad, dos marcaron 45-64 como el suyo y una no opinó.

Cinco personas marcaron masculino como género, una como transgénero, una como femenino, y otra no opinó.

Otra Información Importante:

- Preguntas serán hechas.
- Habrá una hoja para poder conversar sobre videos de interés
- Se les agradeció por venir.
- El concepto de vigilancia será manejado como la ciudad de Seattle lo maneja.
- Tom: Agradeció a los invitados por venir

Surveillance. In 2017 city council passed an ordinance to see what technology fit the definition of surveillance. The information gathered by these surveillance technologies are as follows: to "observe or analyze the movements, behaviors, or actions of identifiable individuals in a manner" which "is reasonably likely to raise concerns about civil liberties, freedom of speech or association, racial equity or social justice."

Presentador: Preguntó si la conversación en inglés fue entendida.

Grupo: Concordó.

Tom: Do not let information on videos stop you from making comments or raising questions.

Presentador: Dio a entender el concepto de vigilancia como ha sido interpretada por la ciudad de Seattle. Fue analizada de esta manera: "La vigilancia es definida como tecnologías que observan o analizan los movimientos, comportamientos, o acciones de individuales identificables de una manera que razonablemente levanta inquietudes sobre libertades civiles, la libertad de expresión o asociación, igualdad racial o justicia social."

- Los movimientos de la gente son observados a través de esta tecnología y puede que para algunas personas esto sea incómodo.
- Las cámaras de policía no califican como tecnologías de vigilancia en este tema.
- La presentación mostrada en la pantalla a través de los videos será transmitida en inglés.
- Se pidió que todos se traten con respeto y que opinen y que su nombre sea mencionado e incluso la vecindad donde viven.

El Grupo

Participante vino porque quiere obtener más información y dar su opinión. Es de Seattle.

Participante viene de Shoreline/Seattle para ver cuánto la tecnología entra afecta

Participante vino porque quiere saber qué información es colectada por el gobierno y para qué usan esa información. Puede que la información obtenida a través de la tecnología sea usada para perseguir a personas de color/minorías/personas marginadas.

Participante vino de First Hill, porque quiere ver el punto de vista de la ciudad y ver que opiniones surgirán.

Participante viene de Seatac porque tiene interés en el tema y porque la seguridad es importante y quiere saber a dónde llega la información.

Participante vine en Ravenna/Northgate, quiere ver que tan confiable es la tecnología y para qué es utilizada. Perjudicial o beneficial?

Participante vine en Seatac y vino porque es un tema muy interesante ya que se tiene que saber/mantener informado de lo que hacen los gobernantes.

Participante vino de Burien por la importancia del tema y la privacidad.

Presentador: La tecnología no es nueva. Ya está siendo usada. Y quieren saber el formato para que las futuras tecnologías tengan.

El video de Seattle Department of Transportation de Acyclica fue mostrado

Esta tecnología es un sensor que detecta el wifi. Es un sensor que detecta la tecnología wifi.

Seattle Metering Tool fue mostrada

Nadie del grupo sabe del tema más el presentador no hablará a fondo de esto para no influenciar opiniones.

Video de Fire Department's Computer Aided Dispatch fue mostrado

El 9-1-1 logging recorder video fue mostrado

Aclaración: Información impresa fue entregada explicando cada una de las tecnologías.

Video de Coplogic fue mostrado

El grupo no conocía que se puede reportar a la policía a través de su página/en línea.

El video de Seattle Police Computer Aided Dispatch fue mostrado

Esta tecnología es similar a la de los bomberos.

Se preguntó cuál video era de interés para analizar

Se acordó el análisis de Acyclica, Binoculares/Sensorlink, y Coplogic

Las Preguntas que sea harán serán las siguientes:

> ¿Qué piensan de este sistema de tecnología en específico y el motivo de usarla?
> ¿Cuál creen que sea el aporte de esta tecnología a la cuidad?
> ¿Qué preocupación les causa el uso que se le dará a este sistema?
> ¿Qué recomendarían a el grupo de políticos de la cuidad responsables de tomar las decisiones de implementar estas tecnologías?
> ¿Qué otra manera habría de resolver el problema que esta tecnología esta designada a resolver?

La Acyclica

Pregunta: ¿Qué piensan de este sistema de tecnología en específico y el motivo de usarla? (Como se usa y cuál es el uso)

- Bien, la tecnología ayuda con la velocidad o el movimiento de los coches.

- La información se guarda y analizan por donde viajas o cuantas veces cruzas este rastreo.

- Si es solo para ver el tráfico está bien.

- Está bien en algunas partes. Puede que sea algo bueno. Pero puede que esta tecnología pueda compartir información personal que puede ser utilizada de otra forma en especial si hay Hacking (forma negativa, uso de datos).

- La tecnología en sí no es tan grande (de tamaño) para ser algo visualmente desagradable. La información captada a través de estos medios puede que ayude a conducir el tráfico de mejor manera pero también puede que tome información personal.

Pregunta: Qué es lo que aporta esta tecnología a la ciudad?

- Seria algo bueno el aporte por la agilidad del tráfico solo si la tecnología está sincronizada con los semáforos, de otra manera no es útil si no aporta para el mejoramiento del tráfico.

- Participante dice que hay alternativas para esquivar el tráfico.

- Participante opina que la tecnología es interesante ya que usa google maps y está de acuerdo con el mejoramiento del tráfico.

- Si el objetivo es de mejorar el tráfico está de acuerdo. Pero también quiere saber en qué lugar(es) estarán los aparatos, si algunas personas serán beneficiadas más que otras.

Pregunta: Qué preocupaciones tienen con posible uso/uso potencial de esta tecnología?

- Le preocupa el uso de wifi en Acyclica porque pueden obtener toda la información de los teléfonos.

- Si el potencial puede ser aplicada a la inversión.

Enfocando al grupo: La tecnología ya está instalada, que les preocupa de su uso?

- El tráfico sigue igual.

- Quien usa o almacena la información.

- La preocupación es la colección de data.

Más de la mitad de grupo opina que esa (el almacén y colección de información) es la preocupación.

- Participante no está de acuerdo. No es la colección de data lo alarmante sino los recursos (dinero utilizado) ya que o la tecnología no están funcionando porque el tráfico sigue igual. No hay cambio con la nueva tecnología, esos gastos no son válidos ya que no hay resultados. Esos gastos pudieran ser utilizados para la comunidad.

- También tienen que ver si la tecnología emite radiación o alguna otra cosa dañina; perjudicial a la salud.

- El gobierno tiene todos los datos.

- Opinión de otro participante: No necesitan esta tecnología para tener los datos porque ya existen métodos para eso, incluso aplicaciones o alguna otra cosa.

La otra preocupación del grupo es que no haya un cambio al problema que se quiere resolver. En el caso de Acrylica sería el mejorar el tráfico.

- Tecnologías como esta necesitan recolectar más opiniones de expertos.

- Sería bueno que la información sea compartida con la comunidad. (Transparencia en fines y objetivos de la tecnología y datos guardados, tácticas implementadas.)

Pregunta: Le dirían algo a los políticos algo del lugar donde se encuentran estos aparatos?

- Hay lugares donde no se necesitan. En algunas partes de Magnolia, Queen Anne, Northgate, no se ocupan.

Seguimiento de pregunta: En las comunidades donde viven los latinos que tanto se ocupa Acyclica?

- Participante no cree que allí se ocupan.

Hablaron sobre la necesitad de puntos estratégicos y calles con más necesidad de ayuda por causa del tráfico.

Presentrador: Crees que Acylica es como el router de google?

- La tecnología no es un router, sino colección de data para planeaciones urbanas.

- Participante: "quiero creer" "convencerme" que los sensores están allí para ayudar con el tráfico.

- No se sabe cuándo las instalaron, los resultados deberían de ser públicos. Si la tecnología es para aliviar el flujo de tráfico entonces por qué no extienden el programa? O por qué no hay mejoramiento del tráfico?

Otra pregunta: Alguna otra tecnología que pueda ser utilizada en vez de Acyclica?

Alternativas:

- Alguna pantalla que indique cuáles vías son alternativas puede reemplazar esto.
- Cambios al límite de velocidad puede que alivie el flujo del tráfico.
- Dejar de construir tanto.
- Rediseño de calles ayudaría flujo de tráfico.

- El rediseñar las vías servirá para las futuras generaciones.

Tecnologia #2

Sensorlink/Binoculares

Pregunta: Que opina el grupo de la tecnología?

- Los binoculares son preocupantes si la persona no tiene ética. Es preocupante que una persona vea a través de binoculares a que una tecnología mida el uso de la electricidad.

- Un sensor que detecta la electricidad sería mejor.

- Al grupo le incomoda el uso de binoculares.

Pregunta: Qué opinas sobre la tecnología medidora de electricidad (sensorlink) y que sea usada en tu casa?

- No le incomoda o afecta a dos participantes.

- La preocupación sería que le quita el trabajo a una persona.

- Los binoculares son invasivos.

- Para que usar binoculares si es que se puede llegar a el hogar y ver el medidor en persona, pidiendo permiso? Si la tecnología es usa para ver que las personas se roban la electricidad, creen que no saben quiénes roban?

- El grupo cree que si saben.

Pregunta: Cual creen que sea el aporte que esta tecnología?

- El video dice que 3 millones de dólares son ahorrados.

Pregunta: De qué manera beneficia esto a la cuidad/ciudadanos/comunidad?

- El robo de la luz es preocupante.

- Si ya llevan el record y datos y le hacen saber a la comunidad puede que ahorren dinero.

- Uso de binoculares puede dar trabajo a una persona y dinero puede ser ahorrado con esta tecnología.

- La tecnología trae gasto de electricidad para poder ver gastos de luz? Si pretende evitar el robo entonces los gastos de la factura eléctrica deberían de seguir estables.

Pregunta: La confianza en estos medidores serán confiables? Serán efectivos?

- Ayuda a la precisión, a bajar precios.

- Que quiten los binoculares sería una sugerencia, o usar binoculares que graban con video.

- Si ya tienen récord sobre la energía (consumo, gastos, etc.), el robo de energía no es suficiente para establecer este tipo de tecnología ya que puede ser identificado el robo o alguna otra anomalía dependiendo en el nivel alto o bajo o repentino analizado/visto/detectado por métodos convencionales ya establecidos.

- Otra recomendación: Usar background check, uso de uniforme por trabajadores, cámara en binoculares.

- Un tipo de escáner en los medidores de energía. Poner sensores en un poste de luz para grabar solo la data/información de electricidad

- .La preocupación es que no tan solo será para leer la electricidad sino para obtener otros tipos de información si cámaras fueran usadas.

Tecnologia #3 Coplogic

- Esta tecnología no solo el ahorro de tiempo, sino el ahorro de tiempo policial ya que ellos trabajarían en otras cosas

- El uso de computadora está bien para las denuncias.

- Si personas usan esta tecnología y es analizada en tiempo real por otras personas no hay problema.

Enfoque: Lo que estamos queriendo dialogar es el uso del internet y las denuncias.

- Es otro método para denunciar

- Está de acuerdo con el uso de computadoras para denunciar solo que no todos son capaz de usar este método/tecnología.

Pregunta: En que ayuda a la comunidad?

- Por qué usar estos métodos?

- Grupo están de acuerdo con su uso.

- Puede salvar una vida.

- Los riesgos y acciones determinan la urgencia de la intermisión policiaca.

• Alguna gente se siente más capaz de acudir a través de este sistema la tecnología en uso tiene validez.

- Bueno para la violencia doméstica.

- Las fallas electrónicas son preocupantes especialmente en reportes policiacos.

- Las preocupaciones es que el reporte no salió, no llegó por cualquier razón.

- No todos podrán o saben usar las computadoras.

- Fallas de los algoritmos o cuando o que promueve urgencia de cada demanda es alarmante.

- Criterio de demandas y que clase de preocupación de parámetros son confiables tienen que ser cuestionados/analizados, y que/quien es digno de prioridad o importancia o de ayuda.

Pregunta: De qué manera este uso beneficiaria a la comunidad?

- Personas pueden ser discriminadas

- Las personas le temen a los policías. Y este medio puede ayudar a que el miedo disminuya.

- La computadora decidirá la importancia/urgencia del reporte/emergencia dando a llevar acciones de emergencia.

- Gravedad de emergencia determina uso de tecnología.

Pregunta: Alguna inquietud sobre el uso de esta tecnología?

- La elección automática de cada caso o la manera en que la persona escribió el reporte y la manera en que la computadora lo entendió es alarmante.

Pregunta: En qué situación usarán esta tecnología?

- Una pelea en la calle, un malestar corporal, cuestiones de vida, abuso doméstico
- Cada uno tiene la definición de vigilancia, pero que tal la definición de emergencia?
- La definición de emergencia es diferente con cada persona.
- Si nos basamos en la definición de emergencia sólo en cuanto estemos en peligro inmediato o en tiempos mínimos/ de transcurrencia alarmante/peligrosa el uso de será implementado o limitado solo a instantes inmediatos de peligro

Pregunta: Para qué sirve el reporte de la computadora?

- Para reportar algo que ya sucedió o que son recurrentes.
- Basado en el concepto de emergencia, las personas pueden tomar el método adecuado para reportar su caso y a través del medio necesario.
- Los reportes no son anónimos.
- Los datos son recolectados aun, a pesar de la opción escogida.

Pregunta: Qué les recomendarían a los políticos?

- Que sea multi-idioma, implementar audio, implementar sistemas que ayuden a múltiples personas con diversas capacidades/necesidades

Pregunta: Algún otro comentario en general sobre la tecnología de vigilancia?

- Si es usada de manera adecuada y como han dicho está bien.

- El uso de la tecnología es bueno para dar respuesta para todas las cosas y personas.

Consejo:

- Den información más información sobre lo que están haciendo. (transparencia/divulgación de información)

- Que haya más transparencia.

Ser transparentes sobre la colección de datos, para que haya discusiones y decisiones Informadas, en todas las tecnologías implementadas/por implementar.

Byrd Barr Place

2/28/2019 Surveillance Technology Focus Group

Thursday, February 28, 2019
1:42 PM
Disclaimer: some of these notes are written in first-person. These should not be considered direct quotes

Videos:
- Acyclica: sensors recognize when a wifi enabled device is in range of it. Attached to street lights
- 911 recorder: records the conversation with the person calling 911, and conversation with the dispatched officers
- CopLogic: Online police report, treated as a regular policy report
- Computer Aided Dispatch
- Seattle City Light: Binoculars for meter readers; sensor to see if someone is stealing electricity

Tom: Read definition of surveillance

Craig: invasion of privacy?
- Electric one: I never even know they had the sensor one.

Community Member: used to be in the tech industry for thirty years. Writing a book about surveillance and technology

Wanda: I like the online police report. If someone is experiencing a crisis or trauma, you can go ahead and report it.
- Surveillance, I understand the concern, but overall I think it's a good thing. There is good and bad in any location, you'll find people who are taking advantage of it, but hopefully there are systems in place.
- Used to work nights, and catching the bus at night is scary. Having the cameras and police out when catching the bus helps, I appreciate that. No one likes to be watched, but if it's gonna keep people safe, that's a good thing.

Mercy: security is a great safety issue

Craig: there are some parts of the neighborhood/city that need to be watched, and some that need to be left alone

Wanda: as long as it's even

Craig: Sometimes it's not even

Both: There are hot spots though

Which of the surveillance technologies do you think could be abused to pinpoint specific communities?

IG: The Computer Aided Dispatch

Talking about the International District:
- Lots of businesses and residential crammed together in a larger space
- Talking about a great community member who died; if they had surveillance technology them, maybe they would have found his killer

"Some neighborhoods need to be watched"
- Gangs; drug use

Tom: getting back to CAD, how do we feel about the information that is stored
- Craig: there are concerns, but who is allowed to see it, how is it stored? That's a concern
  - Is it used for BOLOs? Is it everyone who is in the area, all of the police officers? Or is there some discretion as to which police officers would be given the information?
- Wanda: plenty of people are arrested who "fit a description"
  - Discussion about the racial discrimination: how people who think that "all [insert race here] look alike".
  - Individuals may think like that, but police officers have the capability to ruin someone's life.
- Marjorie: just recently got a smart phone, and it's new to me that someone could know where I'm going and I wouldn't be aware of it
  - Without my consent.

- Mercy: grew up with the idea that big brother is watching you
  - Tracking how many times I go to the library seems like a waste of money
  - People who are not law abiding citizens, they are the ones to be worried
- Craig: What about selling weed, coke, etc. Should they be worried?
  - Mercy: well at least in Seattle, it's ok to sell
- Mercy: big brother is watching. We already know that, it's just more obvious now
- There is a lot of technology that we are not made aware of

Tom: So acyclica, is it worth it? Some people worried it's tracking, is it something that we can live without?
- Should we put up signs that this road is tracked?
  - Viron: Maybe
  - Mercy: let people out there know that you're on camera.
  - Viron: does it work if your device is not turned on?

Tom: what do you want to tell the city council about tech that is collecting personal information?
- Wanda: they should get our individual consent
- Martha: putting it on the ballot doesn't mean that you are getting individual consent, because if you vote no but it still passes, you didn't give your consent
- Deana: there are some places around Capitol Hill that I don't feel safe at at night
  - Talking about fire department responding to a fire in her building: when one building alarm system goes off, it goes directly to the fire department - affects multiple buildings.
    - Response time is very good.
  - I choose to turn off the GPS tracking, because I don't need people to know where I'm at
    - If others are watching where I'm at, that's an invasion of privacy. I should be able to walk out my front door and go wherever I want without anyone knowing.
- Location privacy: you can tell a lot about a person based on where they go, and tracking that can build a pretty extensive profile of who you are
- IG: now that I know they are tracking, I will turn it off.

Mr. Surveillance: Surveillance is always secret, and it's an aggressive act. It's meant to exert power over others.

Do you think any individual could raise enough concern that it would change anything?
- Resounding no
- Maybe with a larger group
  - Maybe with the whole city

SCL binoculars:
- Craig: they should warn their customers and let them know they are coming into their yard/looking through binoculars.
- Wanda: as long as they aren't looking in people's windows.
  - When we're walking down the street, it's a little different. Certain neighborhoods do need more surveillance than others

Regarding being watched in public:

- Eydie: in public, it depends on how long. If it's a short period of time, that's one thing, but if you're tracked the whole time you're out, it's unreasonable.
    - I don't know what the solutions would be.
    - Even when the meter read just walks into your yard, it's unnerving.
    - What's the purpose of tracking it this way?
- Mercy: (referring to the acyclica) Why are they doing it all the time? Have they not gotten the information yet?
    - They should already know what the traffic flow would be.
    - We lost a lane to the bicyclist
- Craig: facial recognition used on the street is bad.
- Vyron: sometimes you can't walk down the street and shake someone's hand without getting in trouble
- Mr. Surveillance: The technology has gotten ahead of the law, and it means they have to pay less people

Tom: Are we willing to accept more technology to have less police?

- Craig: how about just making it even? Police have an image to people of color; they are afraid of why they are going to be there. We can police ourselves
- Wanda: I disagree. There are some who think there should be less, but there are also a lot of people who worry about walking down the street
    - As a woman and DV survivor, I appreciate the police and appreciate living in a country where I can call a number for help.
    - I have a big problem with the shooting of unarmed black men, but as an individual I still appreciate the police.
    - But I have a problem being tracked, and I have a problem being watched in my home.
- General comment: The number of police being on the corner is a touchy situation
    - Knowing the police that are on your corner makes a difference. They can police the community better if there is more of a relationship between the two.
- Craig: it has to be both, even. You can't trade off the technology for the police.
- Mr. Surveillance: The trend is they want to go to more technology and less police.

Tom: If right now we have lots of technology, and we want a balance, then how do we do that?

- Craig: keep it the way it is but clean up the police department. Make sure the people who are working there are good at their jobs, not biased or discriminating

CopLogic: making police reports online

- Craig: I think it's stupid.
    - Would use that technology for stupid crimes
- Mercy: you could report your neighbor for silly things
    - Anonymous reporting of crimes that could target people for things they might not call 911 for

- Wanda: there were some lines of traffic where I saw cars lined up with their windows smashed in; nothing taken, but glass all over the place.
  - Police response when called: maybe you should get a cheaper type of car
  - Would he have said that to us if we were a different skin color, or lived in a different neighborhood?
- IG: I think it's a bad thing: someone could make up a story and the officer didn't have to check it.
- Marjorie: I think the online reporting could be abused

Appendix E: All Comments Received from the Public

ID: 10617736557

Submitted Through: Survey Monkey

Date: 3/25/2019 1:49:17 PM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

There's a lot of concerns about this technology.   Highest Concerns: 1a) Acyclica/FLIR (FLIR acquired Acyclica late last year) is continuously tracking the movement and/or presence of all individuals with wifi-enabled devices within range of the sensors in Seattle. 1b) Keep in mind that the sensors will pick up the MAC addresses of ALL nearby individuals, including non-drivers/riders, such as pedestrians, bicyclists, and people in close structures (apartments/offices/churches/hospitals/etc). The draft SIR does not mention any specific additional privacy considerations that were applied to the technical implementation for these special classes of MAC addresses. 2) Acyclica's technical implementation means that Acyclica most definitely has access to the original raw MAC addresses (contrary to the wording in the draft SIR). 3a) There doesn't appear to be any contract between Acyclica/FLIR and SDOT, which means Acyclica/FLIR is not bound to any conditions by the City of Seattle regarding the handling or storage of this tracking data (either raw or aggregate). 3b) Page 14 item 7.2 says "Contractually, Acyclica guarantees that the data gathered is encrypted ..." If there is no contract, then "contractually" should be removed from the SIR. 4) Acyclica/FLIR should revise it's implementation to no longer ever see or handle raw MAC addresses server-side. Alternatively, Acyclica/FLIR should be bound via contract with the City of Seattle to only ever store/retain encrypted unhashed MAC addresses or raw MAC addresses for at most 24 hours. 5) Because Acyclica/FLIR has access to raw MAC addresses, law enforcement agencies, such as ICE (among others) could issue warrants for this data from them. 6) Throughout the draft SIR, the descriptions of the technical implementation are inaccurate and incongruous. According to my conversation with an SDOT representative at the SIR tech fair (plus the letter SDOT provided there from the Acyclica president), my understanding is that the implementation consists of the sensors sniffing the MAC addresses and encrypting them using GPG software, which are then transmitted to the Acyclica servers, then the Acyclica servers decrypt the encrypted MAC addresses and take the raw MAC address add a salt and then hash them using SHA-256. These hashed MAC addresses are what's available via the Acyclica APIs (in aggregate). If this is correct, then there are multiple parts of the SIR that are worded wrong: 6a) Page 6 item 2.3 says, "When Wi-Fi enabled device comes within range, the sensor generates a one-way hash code from the detected device's MAC address (using a SHA-256 algorithm). Only the hash codes are transmitted to their cloud server, and there is no way to reverse this process and access addresses of the original devices." The sensors aren't generating a hash (they're encrypting the MAC address using GPG software) and Acyclica most definitely can access the original raw MAC addresses of the devices.   6b) Same as 6a but on page 8 item 4.2. 6c) On page 11 item 4.10 says "With Acyclica's proprietary technology solutions, the salt rotates every 24 hours on the actual sensor device." There is no salting happening on the devices. If the "24 hours" aspect is correct, then this likely is supposed to say that Acyclica rotates the salt every 24 hours on their server-side. 6d) On page 12 item 5.3 says "Acyclica hosts the aggregated traffic data on their servers, and the gathered

data is encrypted to fully eliminate the possibility of identifying individuals or vehicles." This is confusing. Is Acyclica re-encrypting the hashed MAC addresses? I doubt this. I assume this meant to say that they use of a cryptographic hash function (SHA-256) to obscure the raw MAC address. [Keep in mind that any encryption can be reversed – that's the whole point of encryption (encryption+decryption). And depending on the hashing implementation, it could be easy to pre-compute a look-up table of MAC addresses with known hashes (this is known as a rainbow table). In both cases, this could enable identifying individuals.] 6e) Page 14 item 7.3 says "Acyclica protects the data using encryption technology embedded within proprietary code that secures MAC address at the device prior to transmission to the backend infrastructure for analysis." This appears to be the first and only time the SIR accurately describes the data flow (though GPG itself isn't proprietary to Acyclic/FLIR). 7) The SIR never specifies the encryption methodology being used, which is quite odd considering most companies of substance would want to broadly advertise and market their security claims, if they were indeed robust/modern security implementations. The letter from the Acyclica president says they're using GPG, but that's not specified in the SIR. Additionally GPG is just freely available software – it doesn't explain the encryption methodology being used, which should also be specified in the SIR. For example, if Acyclica is using asymmetric encryption with RSA keys, then that should be included in the SIR. Without this information, it's unclear if Acyclica is using a safe encryption scheme. 8) Lack of details regarding the security of salt used in the hashes. SDOT couldn't provide details of how the salt is generated. Depending on how the salt was generated, it wouldn't be that difficult to create a rainbow table for the hashed MAC addresses (thus making it is easy to determine what the raw MAC address was for a given hashed value from the Acyclica APIs). 9) The terms of the procurement order for Western Systems by SDOT is included in the SIR, but there doesn't appear to be a contract between Western Systems and SDOT. 10) There's also basic security questions I had that SDOT could not answer because Western Systems is the one deploying the sensors. For example, these sensors will have egress network access on TCP ports 80 and/or 443. Are there any network-level controls (firewall) that limits the sensors' egress access only to the Acyclica-owned endpoints? Are the sensors listening for any incoming connections on any ports? RoadTrend devices have a default password that is readily available in the public documentation ("temppwd"). Is that default password reset to a secure, non-default value for sensors deployed on behalf of SDOT? (The answers to all of these security questions is unknown since SDOT doesn't manage the devices. Moreover, if there is no contract with the City of Seattle binding the security/privacy expectations here, then Western Systems might not even be legally at fault if they are deploying these sensors in an incompetent manner.) 11) The draft SIR from SDOT doesn't specify why Acyclica is needed in addition to the License Plate Readers (LPRs) that were covered in Group 1, even though they appear to do the same thing (estimate travel times). 12a) The draft SIR doesn't specify what alternatives SDOT considered to Acyclica and why they were dismissed. 12b) Specifically SDOT does not describe why the privacy risk to all Seattle-area people is worth more than relying on traditional loop detectors, which wouldn't pose a privacy risk (assuming they only are installed at locations that consist of multiple dwellings/businesses/etc on that block). 13a) The data retention period is unclear. The SIR says 10 years in one place and 24 hours in another. Page 12 says "there is a 10 year internal deletion requirement per item#42 of the SDOT Public Retention Schedule & Destruction Authorization Schedule" and page 37 says "Additionally, the data is deleted within 24 hours to prevent tracking devices over time." 13b) Additionally, even if Acyclica is choosing to delete either the encrypted unhashed MAC addresses and/or the raw MAC addresses within 24 hours, that would purely be at their prerogative, since there is no binding contract between the City of Seattle and Acyclica/FLIR that requires they delete the data on that timeline. 14) Since FLIR has discontinued the Acyclica RoadTrend sensors (https://www.flir.com/support/products/roadtrend#Specifications), and because

the SDOT SIR states "all new traffic signal cabinets will include Acyclica units as part of their standard build."; presumably SDOT will seek to acquire and have deployed for them one of the many other FLIR sensors available. However, only the Acyclica RoadTrend sensor was in scope and described in this SIR, hence a future SIR should be submitted by SDOT if other sensors are planned to be deployed. Medium Concerns: 1) The letter from the Acyclica president that SDOT handed out at the SIR tech fair is not included in the draft SIR. 2) Since Acyclica has been bought by FLIR, FLIR may have changed the Acyclica technical implementation; and since there's no contract, they are freely able to do so. (That being said, it would be more work to change the implementation, so they likely have kept the Acyclica implementation the same for now. Who knows about the future though.)

What value, if any, do you see in the use of this technology?

In it's current state (both the lack of contracts and the technical implementation), I see the list of concerns heavily outweighing the pros for using this technology. The value this technology provides is not offset by the greater risk to privacy. Just use loop detectors.

What do you want City leadership to consider about the use of this technology?

1) There needs to be a contract between the City of Seattle and Acyclica/FLIR. 2) Said contract should specifically define MAC addresses as personal information (as is the case for boilerplate contracts from the City of Seattle). 3) Said contract should explicitly define the data handling of MAC addresses such that: 3a) Acyclica/FLIR changes their implementation to now longer see/handle raw MAC addresses server-side. 3b) Alternatively, Acyclica/FLIR is only allowed to retain/store/possess encrypted unhashed MAC addresses or raw unhashed MAC addresses for at most 24 hours. 3c) That SDOT/the City of Seattle owns this data, not Acyclica/FLIR. 4) City leadership should explicitly require that before any sensor other than the Acyclica RoadTrend is deployed on behalf of SDOT that SDOT first submit a SIR covering that new sensor model. (Note that FLIR has discontinued the Acyclica RoadTrend sensor and SDOT states that "all new traffic signal cabinets will include Acyclica units as part of their standard build." so surely SDOT would need to use a different sensor in the future, which would not have gone through this review process. 5) IF ALL OF THE ABOVE ITEMS ARE NOT MET THEN: there should be a moratorium on the deployment of any additional sensors (including pre-existing RoadTrend sensors that SDOT has acquired but not yet deployed); and serious effort should be placed on the removal of this technology from Seattle; and transition to traditional loop detectors.

Do you have any other comments?

SDOT's apparent lack of knowledge about the details of this technology seems to imply a lack of sufficient investigation and understanding on SDOT's part regarding the privacy/civil liberties implications for deploying this technology. There does not appear to have been sufficient prior rigorous thought placed into this technology, especially given that there is a well-known alternative (loop detectors) that could be used that doesn't pose these privacy/civil liberties risks.

Are there any questions you have, or areas you would like clarification?

ID: 10617434174

Submitted Through: Survey Monkey

Date: 3/25/2019 11:48:18 AM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

What value, if any, do you see in the use of this technology?

Helps resolve traffic flow problems

What do you want City leadership to consider about the use of this technology?

Start a program to license bikes and have a bike license RFID sticker so bikes can be included in this data.

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 10600654821

Submitted Through: Survey Monkey

Date: 3/18/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

I have serious concerns about how Acyclica anonymizes individual information. Stating that device IDs are "encrypted" gives no indication what is *actually* done with the data, nor what is legally permissible. Some specific issues: 1. "Encrypting" of device data is under-specified. Is this a 1-way hash? HMAC? Public-key encryption? Many of these options are _reversible_, which is a huge privacy concern. The City should be required to subject the technical details of this anonymization to public scrutiny.   2. Given information about a WiFi device, Acyclica will likely be able to identify all previous movements of the device simply by "encrypting" the device data again. This does not provide sufficient privacy.   3. If a device can be identified from its "encrypted" ID(s), it will be possible to see movements from an individual device over time. It will be incredibly easy to identify the individual using the device from this data. This does not provide sufficient privacy.   4. Even if the current system does protect individual data in a way that it can't be traced from day-to-day, there are no positive statements of privacy in this message guaranteeing that privacy will be respected in the future. The City should require a forward-looking, public privacy policy that fixes the above issues.

What value, if any, do you see in the use of this technology?

It is useful for transportation planners to be able to see aggregate, anonymous travel time information.

What do you want City leadership to consider about the use of this technology?

In using technology like this, I would like to see a public privacy policy that legally requires the City to randomly anonymize device data, in both a *temporal* and an *irreversible* sense. Storing identifiable information (e.g. to surveil a suspect) must be the exception, and must require a warrant to even start identifiable collection of such data.   This means that, from day to day, nobody should be able to use anonymized data to identify what routes an individual device took. It also means that, given a device, one cannot identify past routes it took.   It also should mean that, should the City fail to maintain privacy, it would be legally liable.

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 7

Submitted Through: Focus Group

Date: 2/28/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

use of personal devices to track people can target communities of color

What value, if any, do you see in the use of this technology?

traffic timing/info. Is really important and useful

What do you want City leadership to consider about the use of this technology?

to this point. Must have approval. Technology can be used to track device for lifetime? It would be important to know that the data can not be approved for continued use or different purpose.

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

What information from my phone is being transmitted? Is it only SDOT that gets the information?

ID: 1

Submitted Through: Public Meeting

Date: 2/27/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

My concern about this, as with all data about citizens collected by the city, is the potential for invasive abuse not intended at the time of collection.

What value, if any, do you see in the use of this technology?

The use stated in the information sheet about Acyclica seems reasonable.

What do you want City leadership to consider about the use of this technology?

It is imperative to safeguard our future that the City Council implement effective, INDEPENDENT, community oversight (not a rubber stamp for the agency doing the collecting.) This is necessary.

Do you have any other comments?

To make sure data is not sharted with federal or other agencies seeking to harass or intimidate citizens.

Are there any questions you have, or areas you would like clarification?

ID: 10562620750

Submitted Through: Survey Monkey

Date: 2/28/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

The type of tracking done by Acyclica should be banned and uses of this technology should be outlawed. In the case of Acyclica they may be taking appropriate measures to safeguard user data, but storing MAC addresses along with location data without explicit consent from users is a violation of civil rights. I certainly have not agreed for the city of Seattle or any vendors to track the position of my phone as it moves throughout the city whether or not that data is properly anonymized.

What value, if any, do you see in the use of this technology?

Having realtime traffic data is obviously important for the city and for citizens. However, that data must come with the explicit consent of the people generating the data. There are other ways to monitor traffic without invading the privacy of citizens.

What do you want City leadership to consider about the use of this technology?

City leadership should take a strong stand on civil liberties and privacy. The City leadership should ban all uses of Acyclica and similar technologies. Any technology of this nature should be on an explicit opt-

in model, meaning that citizens of Seattle must give explicit consent to being tracked before any information is stored.

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 10550708265

Submitted Through: Survey Monkey

Date: 2/23/2019 12:06:47 PM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

This technology can be manipulated and the data can be sold to third parties the chances of attackers gaining access through hacking are high especially in the tech Advanced city of Seattle.

What value, if any, do you see in the use of this technology?

There are better ways to accurately communicate traffic flows without breaching people's privacy

What do you want City leadership to consider about the use of this technology?

The backlash of this is extremely dangerous especially in a growing technical world where data like this can be manipulated and also used to track and or identify specific groups of people in certain demographics. There are license plate reading Technologies that can also be used. When you take information from people's personal handheld cell phones or wifi-enabled devices what you are sending out is that data which then can be hacked and then could cause one of America's worst infiltration of people's privacy

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 10549573617

Submitted Through: Survey Monkey

Date: 2/22/2019 3:39:08 PM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

I have concerns over the data use and protection with this technology, specifically over what data is collected, how it is used/shared, and how long it is stored. Also, I personally am a pedestrian and often not in a car, so I have concerns over how the technology would distinguish my device when I am crossing streets.

What value, if any, do you see in the use of this technology?

Providing traffic information is useful, but I think the same result can be achieved another way

What do you want City leadership to consider about the use of this technology?

Data protection and usefulness of detecting wifi devices. Can we instead use other sensors that detect vehicles, rather than devices?

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 10535192314

Submitted Through: Survey Monkey

Date: 2/16/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

Accessing a person's device and identifying a person/vehicle is tracking them even if it is encrypted to 'anonymize' the data. This concerns me.

What value, if any, do you see in the use of this technology?

Helping with the traffic flow is good, Using something that is not potentially a personal device to track the flow needs to be done, and can be done.

What do you want City leadership to consider about the use of this technology?

Changing the tracking technique to something less invasive.

Do you have any other comments?

Thank you for the opportunity to comment.

Are there any questions you have, or areas you would like clarification?

ID: 10534034636

Submitted Through: Survey Monkey

Date: 2/15/2019 6:25:29 PM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

Can encryption be disabled? You have misled folks - first claiming " travel times" by tracking WiFi Mac addresses, then only explaining use at intersections. I suspect the tokens are persisted to allow calculations of travel times. What rules do you follow for timely destruction of encrypted tokens and when is such policy excepted?

What value, if any, do you see in the use of this technology?

Good info, if not abused.

What do you want City leadership to consider about the use of this technology?

Publish the truth and facts on encrypted token persistence and possible exposure\tracking of actual MAC addresses. It would be trivial to do so, if not being done already.

Do you have any other comments?

Are you tracking my IP? I suspect so. Maybe we need to all use VPNs. Gawd I hope not.

Are there any questions you have, or areas you would like clarification?

Please Publish the full truth.

ID: 10533818150

Submitted Through: Survey Monkey

Date: 2/15/2019 3:05:03 PM

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

I do not support this technology being used, especially since there is not similar data analysis that is multimodal in nature.

What value, if any, do you see in the use of this technology?

Nothing. It is not people first. It is focused on moving cars, likely at the expense of people.

What do you want City leadership to consider about the use of this technology?

Whether or not this technology is appropriate for dense urban settings that should prioritize people. I don't think it is.

Do you have any other comments?

Please stop using this technology. Instead develop a public policy framework that prioritizes moving people, not cars.

Are there any questions you have, or areas you would like clarification?

ID: 10530586898

Submitted Through: Survey Monkey

Date: 2/14/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

Where to start.... who made this decision? Why was it not put to public vote? Who is maintaining the data? What type of encryption is being used? Were is the transparency and ability to audit statements of data use and deletion? Why does SDOT think they are above City Ordinance 124142? This is not okay by any measure.

What value, if any, do you see in the use of this technology?

None. None whatsover. Governments are supposed to work FOR the people and the people never asked for this. This is an abuse of position, and overreach of authority, and a failure to protect the people of Seattle.

What do you want City leadership to consider about the use of this technology?

Making the public aware!! Increasing transparency and holding SDOT accountable for this egregious breach of public trust. In the best case abandoning the technology altogether. Seattle is slipping into an Orwellian cautionary tale.

Do you have any other comments?

I'm sickened at the state of our leadership in this city.

Are there any questions you have, or areas you would like clarification?

Was this ever put to public vote or opinion prior to spending millions over dollars over multiple years?

ID: 10514717375

Submitted Through: Survey Monkey

Date: 2/6/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

Hashed ("encrypted") MAC addresses do not fully anonymize users.

What value, if any, do you see in the use of this technology?

What do you want City leadership to consider about the use of this technology?

It is unacceptable to track MAC addresses, even in hashed ("encrypted") form.

Do you have any other comments?

Do not implement this technology. To the extent that this technology is already in place, remove it. It is an invasion of Seattle's privacy.

Are there any questions you have, or areas you would like clarification?

Why is this approval process being conducted retroactively? Why was the public not asked BEFORE the technology was built out?

ID: 10513975574

Submitted Through: Survey Monkey

Date: 2/6/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

They record personally identifiable information.

What value, if any, do you see in the use of this technology?

None that could be captured in a different way.

What do you want City leadership to consider about the use of this technology?

Do not use it.

Do you have any other comments?

Are there any questions you have, or areas you would like clarification?

ID: 10513975288

Submitted Through: Survey Monkey

Date: 2/6/2019

Which surveillance technology that is currently open for public comment, do you wish to comment on?

SDOT: Acyclica

What concerns, if any, do you have about the use of this technology?

Acyclica's report states that "Only the hash codes are transmitted to their cloud server, and there is no way to reverse this process and access addresses of the original devices" (section 2.3), which is incorrect (hashed MAC addresses are susceptible to rainbow attack, and therefor deanonymizable). You can find more information about this topic here: https://en.wikipedia.org/wiki/MAC_address_anonymization#Why_this_does_not_work_in_practice

What value, if any, do you see in the use of this technology?

None.

What do you want City leadership to consider about the use of this technology?

The method used by Acyclica to anonymize personally identifiable information is faulty. Please contact some expert on this topic (i.e. cryptography and IT security) to understand the implications of this.

Do you have any other comments?

Privacy is important :)

Are there any questions you have, or areas you would like clarification?

_____

Appendix F: Department Responses to Public Inquiries

The Departmental responses to questions posed are listed below. Referenced materials may be found in Appendix I.

1) For what specific purpose or purposes will Acyclica be used, and what policies state this?

   We have no specific policies guiding our use of Acyclica, but SDOT's intent is to use this data service to deliver travel time, delay, analytics and other traffic data.

   See Section 1.2 of the *Western Systems Purchase Order - Terms and MOU* which states in part:

   1.2. The City has tested the performance of this data service and is satisfied with the ability for this data service to deliver travel time, delay, analytics and other data and data services, as compared to the City's existing approaches to gathering and analyzing the same data.

2) Does SDOT have a contract with Acyclica, and if so, why is the contract not included in the SIR?

   SDOT does not have a contract with Acyclica. SDOT established blanket contract #0000003493 (see attached) and a MOU with the *Western Systems Purchase Order - Terms and MOU* (see attached) with Western Systems Inc. to provide Acyclica's data and support as their local distributor.

3) Who owns the raw, non-aggregated data collected by Acyclica devices?

   SDOT owns the raw and aggregated data. See the attached letter *SDOT Acyclica Data Ownership* which clarifies that.

4) What is the retention period for the different types of collected data (aggregated and non-aggregated)—for both SDOT and Acyclica?

Acyclica / FLIR does not have a limit on data retention. The reason for this policy is that as they develop new methods of analyzing traffic, the analyses are effective as of the date the sensors were first deployed rather than when the feature was first available in the software.

SDOT does have a 10-year retention policy for travel times per item #42 in the attached SDOT Records Retention Schedule, but "Traffic Study Reports" are also designated as Potentially Archival.

5) Provide accurate descriptions of Acyclica's data security practices including encryption and hashing, consistent with the letter from Daniel Benhammou, including any additional practices that prevent reidentification.

Acyclica / FLIR employs both salting, hashing and encryption. The MAC addresses are salted with a key prior to hashing which rotates every 24-hours to eliminate the ability to track an individual from day-to-day. Prior to being transmitted from the sensor in the field to the cloud, the data is encrypted end-to-end using TLS and a 2048-bit encryption certificate and a nominal strength of 256 bits. Acyclica / FLIR utilizes a cryptographic hash function to generate a one-way, fixed size 256-bit hash.

Also refer to section 2.5.1 of the *Western Systems Purchase Order - Terms and MOU* which states, "It is the understanding of the City that the data gathered are encrypted to fully eliminate the possibility of identifying individuals or vehicles. In no event shall City or Western Systems and its subcontractors make any use of the data gathered by the devices for any purpose that would identify the individuals or vehicles included in the data."

6) What third parties will access Acyclica's data, for what purpose, and under what conditions?

Acyclica has given the ability for cities to manage their own users and additionally taken steps to eliminate data sharing unless the owning city has given explicit authorization. Existing users of SDOT's aggregated travel time data include:

1. **SDOT staff conducting engineering studies**
2. **WSDOT and KC Metro staff conducting engineering studies in partnership with SDOT**
3. **Consulting partners who build traffic products on SDOT's behalf**

7) Why are 89 locations not specified in the embedded Acyclica locations sheet in Section 2.1 of the SIR?

The sensors without locations either used to be in the field but were replaced at some point or are awaiting initial deployment (53). SDOT does not have a timetable to install those units.

8) Will SDOT continue to use Acyclica RoadTrend Sensors, and for how long? If SDOT plans to switch to other sensors, which ones, and how do their capabilities differ from the RoadTrend Sensors?

   Since the RoadTrend product line was discontinued, we've begun procuring the EDI DA-300 (please see attached data sheet) in its place. The EDI DA-300 will be the model we consistently deploy in the foreseeable future, and there are no plans to consider an alternative at this point. The unit has additional features differentiating it from the RoadTrend such as generating alarms when a traffic cabinet door is opened, and the ability to provide remote access to traffic signals using cellular communication.

9) Did SDOT consider any other alternatives when deciding to acquire Acyclica? Did SDOT consider other, more privacy protective traffic management tools in use (for example, inductive-loop detectors currently used by the Washington State Department of Transportation and the US Department of Transportation)

   Please refer to the attachment *Acyclica Travel Time Accuracy & Reliability Analysis.* This report summarizes the comparison of travel time data received from both License Plate Reader Cameras (our standard technology then) and Acyclica units along the same corridor during a 2014 study period. Due to the cost effectiveness and accuracy of travel time information provided by Acyclica, SDOT discontinued the procurement of additional License Plate Reader Cameras and transitioned into contract with Western Systems to receive that data as a service.

   Inductive loops are commonly used on freeways to estimate spot (point location) speeds and travel times. To accomplish this, two loops are placed at a fixed distance from one another, forming a speed "station". Attempts to use inductive loops similarly to gather arterial travel times in urban conditions have not proven successful due to the influence of traffic signals and other measures intentionally implemented to slow or stop traffic.

10) How does SDOT plan to reduce the privacy infringements on nondrivers/riders?

Please see the attachment *Seattle Security Assurance Request*. It is a copy of the letter sent to Daniel Benhammou (Acyclica CEO) on 4/20/2015.

In response, Acyclica hired Coalfire System, Inc. to independently audit their security practices. The results of that report state that, "Coalfire was able to confirm the operation effectiveness of Acyclica's device and systems design such that there is no PII retained in any data repository, nor is the non PII MAC address ever presented to customer/clients in an unencrypted, unhashed format. Design effectiveness was confirmed with review, observation and interviews of configuration and code implementation with administrative personnel. Documented processes were also validated as effectively designed and operational as demonstrated by supporting evidence assessed during review of data repositories and device and system configurations."

Acyclica also made changes in response to the three points identified in the memo. These specifically are as follows:

City of Seattle Request #1: Enhance their key management program to reduce the risk that the exposure of a single key would compromise all of their customer data.

> *Acyclica Response #1: Key management has been enhanced such that every sensor has a unique which can be reset remotely so that should a device be compromised, the key can only be used to access the individual sensor unless it has been invalidated.*

City of Seattle Request #2: Delete detail-level data after a period of time (e.g. 90 days). Aggregated data can be maintained to understand traffic patterns and historical information. Detail-level data likely has minimal value especially as hashing methodologies are changed daily, when prevents the comparison of detailed records across days.

> *Acyclica Response #2: Acyclica has removed access to all detail-level data from all APIs and software interfaces so that it can only be used for the development of new features. All detail-level data has been encrypted for storage to protect the privacy of such data and access to the encryption keys is limited to several specific individuals.*

City of Seattle Request #3: Do not share a city's data without express permission from the owning city.

> *Acyclica Response #3: Acyclica has given the ability for cities to manage their own users and additionally taken steps to eliminate data sharing unless the owning city has given explicit authorization.*

Appendix G: Letters from Organizations or Commissions

City of Seattle
Community Technology Advisory Board
seattle.gov/ctab

March 12th, 2019

Seattle City Council
600 4th Ave
Seattle, WA 98104

Re: Surveillance Ordinance Group 2 Public Comment

We would like to first thank City Council for passing one of the strongest surveillance technology policies in the country, and thank Seattle IT for facilitating this public review process.

These public comments were prepared by volunteers from the Community Technology Advisory Board (CTAB) Privacy & Cybersecurity Committee, as part of the surveillance technology review defined in Ordinance 125376. These volunteers range from published authors, to members of the Seattle Privacy Coalition, to industry experts with decades of experience in the information security and privacy sectors.

We reviewed and discussed the Group 2 Surveillance Impact Reports (SIRs) with a specific emphasis on privacy policy, access control, and data retention. Some recurring themes emerged, however, that we believe will benefit the City as a whole, independent of any specific technology:

- **Interdepartmental sharing of privacy best practices**: When we share what we've learned with each other, the overall health of the privacy ecosystem goes up.
- **Regular external security audits**: Coordinated by ITD (Seattle IT), routine third-party security audits are invaluable for both hosted-service vendors and on-premises systems.
- **Mergers and acquisitions**: These large, sometimes billion-dollar ownership changes introduce uncertainty. Any time a vendor, especially one with a hosted service, changes ownership, a thorough review of any privacy policy or contractual changes should be reviewed.
- **Remaining a Welcoming City**: As part of the Welcoming Cities Resolution, no department should comply with a request for information from Immigration and Customs Enforcement (ICE) without a criminal warrant. In addition, the privacy of all citizens should be protected equally and without consideration of their immigration status.

Sincerely,

Privacy & Cybersecurity Committee volunteers
Torgie Madison, Co-Chair
Smriti Chandashekar, Co-Chair
Camille Malonzo
Sean McLellan
Kevin Orme
Chris Prosser
Rabecca Rocha
Adam Shostack
T.J. Telan

Community Technology Advisory Board
Steven Maheshwary, CTAB Chair
Charlotte Lunday, CTAB Co-Vice Chair
Torgie Madison, CTAB Co-Vice Chair
Smriti Chandashekar, CTAB Member
Mark DeLoura, CTAB Member
John Krull, CTAB Member
Karia Wong, CTAB Member

SFD: Computer-Aided Dispatch (CAD)

Comments

The use of a centralized Computer-Aided Dispatch (CAD) system is essential to protecting the health and safety for all Seattle citizens. The National Fire Protection Association (NFPA) standards outline specific alarm answering, turnout, and arrival times[1] that could only be accomplished in a city of this size with a CAD system.

In addition, with over 96,000 SFD responses per year (2017)[2], only a computerized system could meet the state's response reporting guidelines established in RCW 35A.92.030[3].

CentralSquare provides the dispatch service used by SFD. CentralSquare is a new entity resulting from the merger of Superion, TriTech, Zuercher, and Aptean[4] in September 2018.

Recommendations

- Tritech, the underlying technology supplying SFD with CAD services, has been in use since 2003 [SIR 4.3], making it 16 years old. As with any technology, advancements in security, speed, usefulness, and reliability come swiftly. Due to the age of the technology, we recommend conducting a survey into the plausibility of replacing Tritech as SFD's CAD solution.

- Tritech was merged very recently into CentralSquare in one of the largest-ever government technology mergers to date. Due diligence should be exercised to ensure that this vendor is keeping up to date with industry best practices for security and data protection, and that their privacy policies are still satisfactory after the CentralSquare merger. We recommend ensuring that the original contracts and privacy policies have remained unchanged as a result of this merger.

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[1] "NFPA Standard 1710." https://services.prod.iaff.org/ContentFile/Get/30541
[2] "2017 annual report - Seattle.gov."
https://www.seattle.gov/Documents/Departments/Fire/FINAL%20Annual%20Report_2017.pdf
[3] "RCW 35A.92.030: Policy statement—Service ... - Access WA.gov."
https://app.leg.wa.gov/rcw/default.aspx?cite=35A.92.030
[4] "Superion, TriTech, Zuercher, and Aptean's Public Sector Business to " 5 Sep. 2018,
https://www.tritech.com/news/superion-tritech-zuercher-and-apteans-public-sector-business-to-form-centra

SDOT: Acyclica

Comments

Traffic congestion is an increasingly major issue for our city. Seattle is the fastest-growing major city in the US this decade, at 18.7% growth, or 114,00 new residents[5]. Seattle ranks sixth in the nation for traffic congestion[6]. The need for intelligent traffic shaping and development has never been greater. Acyclica, a service provided by Western Systems and now owned by FLIR[7], is an implementation of surveillance technology specifically designed to address this problem.

We were happy to see the 2015 independent audit of Acyclica's systems [SIR 8.2]. This is an excellent industry best practice, and one that we'll be recommending to other departments throughout this document.

In addition, we are pleased to see the hashing function's salt value rotated every 24-hours [SIR 4.10]. This ensures that even the 10-year retention policy [SIR 5.2] cannot be abused to correlate multiple commute sessions and individually identify a person.

Recommendations

- FLIR Systems' acquisition of Acyclica is a recent development (September 2018). We recommend verifying that the Western Systems terms [SIR 3.1] still apply. If they have been superseded by new terms from FLIR Systems, those should be subject to an audit by SDOT and Seattle IT. Specifically, section 2.5.1 of Western Systems' terms must still apply:

> 2.5.1. It is the understanding of the City that the data gathered are encrypted to fully eliminate the possibility of identifying individuals or vehicles. In no event shall City or Western Systems and its subcontractors make any use of the data gathered by the devices for any purpose that would identify the individuals or vehicles included in the data.

- FLIR Systems is known primarily as an infrared technology vendor. Special care should be taken if FLIR/Acyclica attempt to couple IR scanning with WiFi/MAC sniffing. Implementation of an IR system would necessitate a new public surveillance review.

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[5] "114,000 more people: Seattle now decade's fastest-growing big city in ...." 24 May. 2018, https://www.seattletimes.com/seattle-news/data/114000-more-people-seattle-now-this-decades-fastest-growing-big-city-in-all-of-united-states/
[6] "INRIX Global Traffic Scorecard." http://inrix.com/scorecard/
[7] "FLIR Systems Acquires Acyclica | FLIR Systems, Inc.." 11 Sep. 2018, http://investors.flir.com/news-releases/news-release-details/flir-systems-acquires-acyclica

City of Seattle
Community Technology Advisory Board
seattle.gov/ctab

SCL: Binoculars, Check Meter, SensorLink

Comments

As these three technologies are serving the same team and mission objectives, we will review them here in a combined section.

The mission of the Current Diversion Team (CDT) is to investigate and gather evidence of illegal activity related to the redirection and consumption of electricity without paying for its use. As such, none of these technologies surveil the public at large. They instead target specific locations and equipment, albeit without the associated customer's knowledge.

It appears as though all data collected through the Check Meter Device and SensorLink Amp Fork are done without relying on a third-party service, so the usual scrutiny of a vendor's privacy policies does not apply.

Recommendations

- **Binoculars**: We have no recommendations for the use of binoculars.
- **Check Meter Device & SensorLink Amp Fork**: As noted in the comments above, we have no further recommendations for the use of the Check Meter Device and SensorLink Amp Fork technologies.
- **Racial Equity**: As with any city-wide monitoring practice, it can be easy to more closely scrutinize one neighborhood over another. Current diversion may be equally illegal (and equally prevalent) across the city, but the enforcement of this law may be unevenly applied. This could introduce racial bias by disproportionately burdening specific neighborhoods with a higher level of surveillance.

  As described, DPP 500 P III-416 section 5.2[8] asserts that all customers shall receive uniform consideration [SIR RET 1.7]. To ensure this policy is respected, we encourage City Light to track and routinely review the neighborhoods where CDT performs investigations, with a specific emphasis on racial equity. This information should be made publicly available.

  When asked at the February 27th Surveillance Technology public meeting, SDOT indicated that no tracking is currently being done on where current diversion is enforced.

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[8] "SCL DPP 500 P III-416 Current Diversion - Seattle.gov." 11 Jan. 2012,
http://www.seattle.gov/light/policies/docs/III-416%20Current%20Diversion.pdf

SPD: 911 Logging Recorder

Comments

This is a technology that the general public would likely already assume is in place. Some of the more sensational 911 call logs have been, for example, played routinely on the news around the country. Since it would not alarm the public to know that 911 call recording is taking place, our recommendations will focus primarily on data use, retention, and access control.

Call logging services are provided by NICE Ltd., an Israeli company founded in 1986. This vendor has had a troubling history with data breaches. For example, a severe vulnerability discovered in 2014 allowed unauthorized users full access to a NICE customer's databases and audio recordings[9]. Again, in 2017, a NICE-owned server was set up with public permissions, exposing phone numbers, names, and PINs of 6 million Verizon customers[10].

Recommendations

- SIR Appendix K includes a CJIS audit performed in 2017. SIR section 4.10 also mentions that ITD (Seattle IT) periodically performs routine monitoring of the SPD systems.

  However, given the problematic history with the quality of the technology vendor, if any of the NICE servers, networks, or applications were installed by the vendor (or installation was overseen/advised by the vendor), we recommend an external audit of the implementation of the call logging technology.

- SIR sections 3.3 and 4.2 outline the SPD-mandated access control and data retention policies, however it is not apparent if there is a policy that strictly locks down the use of this technology to a well-defined list of allowed cases. We recommend formally documenting the allowed 911 Logging use cases, and creating a new SIR for any new desired applications of this technology.

  With a 90-day retention policy [SIR 4.2], and with SPD receiving 900,000 calls per year[11], there are about 220,000 audio recordings existing at any given time. This is enough for a data mining, machine learning, or voice recognition project.

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[9] "Backdoor in Call Monitoring, Surveillance Gear — Krebs on Security." 28 May. 2014, https://krebsonsecurity.com/2014/05/backdoor-in-call-monitoring-surveillance-gear/
[10] "Nice Systems exposes 14 million Verizon customers on open AWS ...." 12 Jul. 2017, https://www.techspot.com/news/70106-nice-systems-exposes-14-million-verizon-customers-open.html
[11] "9-1-1 Center - Police | seattle.gov." https://www.seattle.gov/police/about-us/about-policing/9-1-1-center

SPD: Computer-Aided Dispatch (CAD)

Comments

As mentioned in the section "SFD: Computer-Aided Dispatch (CAD)" and the section "SPD: 911 Logging Recorder", these dispatch technologies are mandatory for functional emergency services of a city this size. No other system would be able to meet the federal- and state-mandated response times and reporting requirements.

SIR section 4.10 mentions that ITD (Seattle IT) performs routine inspections of the Versaterm implementation.

Versaterm, founded in 1977, provides the technology used by SPD's CAD system. SPD purchased this technology in 2004. In September of 2016, there was a legal dispute between Versaterm and the City of Seattle over a Public Records Act (PRA) disclosure of certain training and operating manuals[12]. The court ruled in favor of Versaterm.

Recommendations

- It is not immediately clear what use cases are described in SIR 2.5 describing data access by "other civilian staff whose business needs require access to this data". All partnerships and data flows between SPD and businesses should be explicitly disclosed.

- This system has been in place for 15 years. As with any technology, advancements in security, speed, usefulness, and reliability come swiftly. Due to the age of the technology, and the potential damaged relationship between Seattle and Versaterm due to the aforementioned legal dispute, we recommend conducting a survey into the plausibility of replacing Versaterm as SPD's CAD solution.

- As mentioned in the introduction to this document, Seattle has adopted the Welcoming Cities Resolution[13]. In honoring this resolution, we recommend that SPD never disclose identifying information, from CAD or any system, to Immigrations and Customs Enforcement (ICE) without a criminal warrant.

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[12] "Versaterm Inc. v. City of Seattle, CASE NO. C16-1217JLR | Casetext." 13 Sep. 2016, https://casetext.com/case/versaterm-inc-v-city-of-seattle-2
[13] "Welcoming Cities Resolution - Council | seattle.gov." http://www.seattle.gov/council/issues/past-issues/welcoming-cities-resolution

![City of Seattle Community Technology Advisory Board logo] **City of Seattle**
Community Technology Advisory Board
seattle.gov/ctab

SPD: CopLogic

Comments

Track 1 - Public reporting of no-suspect, no-evidence, non-emergency crimes

CTAB understands that in cases where no evidence or suspect is available, a crime should be reported (for statistical or insurance purposes) but does not require the physical appearance of an SPD officer.

Track 2 - Retail Loss Prevention

This track is more problematic, as it could be used by retailers as a method to unreasonably detain, intimidate, or invade the privacy of a member of the public accused of, but not proven guilty of, shoplifting.

Recommendations

- **Track 2**: If not already done, retailers should be trained and informed that having a CopLogic login does not allow them to act as if they are law enforcement officers. Members of the public suspected of shoplifting need to have an accurate description of their rights in order to make informed decisions <u>before</u> providing identifying information. Retailers are also held to a lower standard than SPD regarding racial bias. It is virtually guaranteed that people of color are disproportionately apprehended and entered into the retail track of CopLogic.

  <u>We recommend discontinuing Track 2 entirely</u>.

- **Track 1 & 2**: If not already done, SPD, in coordination with Seattle IT, should perform or hire a company to perform an audit of the vendor's systems. If this audit has not been performed in the 8 years since purchasing this system, it should absolutely be done before the 10-year mark in 2020.
- **Track 1 & 2**: It is not immediately clear in the SIR or LexisNexis's Privacy Policy what CopLogic does with these records long-term, after SPD has imported them into their on-premises system. A written statement from LexisNexis on how this data is used, mined, or sold to affiliates/partners should be acquired by SPD.
- **Track 1 & 2**: We recommend migrating CopLogic to an on-premises solution. We found the LexisNexis privacy policy to be obfuscated and vague[14]. Such sensitive information should not be protected by trust alone.

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[14] "Privacy Policy | LexisNexis." 7 May. 2018, https://www.lexisnexis.com/en-us/terms/privacy-policy.page

March 20, 2019

RE: ACLU-WA Comments Regarding Group 2 Surveillance Technologies

Dear Seattle IT:

On behalf of the ACLU of Washington, I write to offer our comments on the surveillance technologies included in Group 2 of the Seattle Surveillance Ordinance process. We are submitting these comments by mail and electronically because they do not conform to the specific format of the online comment form provided on the CTO's website, and because the technologies form groups in which some comments apply to multiple technologies.

These comments should be considered preliminary, given that the Surveillance Impact Reports (SIR) for each technology leave a number of significant questions unanswered. Specific unanswered questions for each technology are noted in the comments relating to that technology, and it is our hope that those questions will be answered in the updated SIR provided to the Community Surveillance Working Group and to the City Council prior to their review of that technology. In addition to the SIR, our comments are also based on independent research relating to the technology at hand.

The 8 technologies in Group 2 are covered in the following order.

I.   Acyclica (SDOT)

II.   CopLogic (SPD)

III.   Computer-Aided Dispatch & 911 Logging Recorder Group

        1. Computer-Aided Dispatch (SPD)

        2. Computer-Aided Dispatch (SFD)

        3. 911 Logging Recorder (SPD)

IV.   Current Diversion Technology Group

        1. Check Meter Device (Seattle City Light)

        2. SensorLink Amp Fork (Seattle City Light)

        3. Binoculars/Spotting Scope (Seattle City Light)

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ACLU
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I. Acyclica - SDOT

Background

Acyclica technology is a powerful location-tracking technology that raises a number of civil liberties concerns because of its ability to uniquely identify individuals and their daily movements. Acyclica (via its hardware vendor, Western Systems), manufactures Intelligent Transportation System (ITS) sensors called RoadTrend that are used by the Seattle Department of Transportation for the stated purpose of traffic management. These RoadTrend sensors collect encrypted media access control (MAC) addresses, which are transmitted by any Wi-Fi enabled device including phones, cameras, laptops, and vehicles. Collection of MAC addresses, even when hashed (a method of de-identifying data irreversibly),[1] can present locational privacy challenges.

Experts analyzing a dataset of 1.5 million individuals found that just knowing four points of approximate spaces and times that individuals were near cell antennas or made a call were enough to uniquely identify 95% of individuals.[2] In the case of Acyclica's operation in Seattle, the dataset is comprised of MAC addresses recorded on at least 301 intersections,[3] which allows Acyclica to generate even more precise location information about individuals. Not only do the RoadTrend sensors pick up the MAC addresses of vehicle drivers and riders, but these sensors can also pick up the MAC addresses of all nearby individuals, including pedestrians, bicyclists, and people in close structures (e.g., apartments, offices, and hospitals). Acyclica technology's location tracking capabilities means that SDOT's use of Acyclica can not only uniquely identify individuals with ease, but can also create a detailed map of their movements. This raises privacy concerns for Seattle residents, who may be tracked without their consent by this technology while going about their daily lives.

These location-tracking concerns are exacerbated by the lack of clarity around whether SDOT has a contract with Acyclica (see below). Without a contract, data ownership and scope of data sharing and repurposing by Acyclica is unclear. For example, without contractual restrictions, Acyclica

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[1] Hashing is a one-way function that scrambles plain text to produce a unique message digest. Unlike encryption—which is a two-way function, allowing for decryption—what is hashed cannot be un-hashed. However, hashed location data can still be used to uniquely identify individuals. While it is infeasible to compute an input given only its hash output, pre-computing a table of hashes is possible. These types of tables consisting of pre-computed hashes and their inputs are called rainbow tables. With a rainbow table, if an entity has a hash, then they only need to look up that hash in their table to then know what the original MAC address was.

[2] Montjoye, Y., Hidalgo, C., Verleysen, M., and Blondel, V. 2013. Unique in the Crowd: The privacy bounds of human mobility. *Scientific Reports*. 3:1375.

[3] The SIR states that SDOT has 301 Acyclica units installed throughout the City. However, an attached location excel sheet in Section 2.1 lists 389 Acyclica units, but only specifies 300 locations.

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would be able to share the raw data (i.e., the non-aggregated, hashed data before it is summarized and sent to SDOT) with any third parties, and these third parties would be able to use the data in any way they see fit, including combining the data with additional data such as license plate reader or facial recognition data. Acyclica could also share the data with law enforcement agencies that may repurpose the data, as has happened with other City data. For example, in 2018, U.S. Immigration and Customs Enforcement (ICE) approached Seattle City Light with an administrative subpoena demanding information on a particular customer location, including phone numbers and information on related accounts.[4] ICE also now has agency-wide access to a nationwide network of license plate readers controlled by Vigilant Solutions,[5] indicating the agency may seek additional location data for immigration enforcement purposes in the future. Data collected via Acyclica should never be used for law enforcement purposes.

The uncertainty around the presence or absence of a contract contributes to two key issues: (1) lack of a clearly defined purpose of use of Acyclica technology; and (2) lack of clear restrictions on the use of Acyclica technology that track that purpose. With no contract, SDOT cannot enforce policies restricting the use of Acyclica technology to the intended purpose.

There are also a number of contradictory statements in the SIR concerning the operation of Acyclica technology,[6] as well as discrepancies between the SIR, the information shared at the technology fair (the first public meeting to discuss the Group 2 technologies),[7] and ACLU-WA's conversation with the President of Acyclica, Daniel Benhammou. All these leave us with concerns over whether SDOT fully understands (and the SIR reflects) the capabilities of the technology. In addition, there remain a number of critical unanswered questions that the final SIR must address (set forth below).

Of additional concern is the recent acquisition of Acyclica by FLIR Systems, an infrared and thermal imaging company funded by the U.S. Department of Defense.[8] As of March 2019, FLIR has discontinued Acyclica RoadTrend sensors.[9] Neither the implications of the FLIR acquisition nor the discontinuation of the RoadTrend sensors are mentioned in the SIR—but if the sensors used will change, the SIR should make clear how that will impact the technology.

a.   Specific Concerns

- *Inadequate Policies Defining Purpose of Use.* Policies cited in the SIR are vague,

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[4] https://crosscut.com/2018/02/immigration-officials-subpoena-city-light-customer-info
[5] https://www.theverge.com/2018/3/1/17067188/ice-license-plate-data-california-vigilant-solutions-alpr-sanctuary
[6] Explained in further detail in 1. Acyclica – SDOT *Major Concerns* below.
[7] http://www.seattle.gov/tech/initiatives/privacy/events-calendar#/?i=3
[8] https://www.crunchbase.com/acquisition/flir-systems-acquires-acyclica--e6043a1a#section-overview
[9] https://www.flir.com/support/products/roadtrend#Specifications

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short, and impose no meaningful restrictions on the purposes for which Acyclica devices may be used.[10] Section 1.1 of the abstract set forth in the SIR states that Acyclica is used by over 50 agencies to "to help to monitor and improve traffic congestion." Section 2.1 is similarly vague, providing what appear to be examples of some types of information the technology produces (e.g., calculated average speeds) in order to facilitate outcomes (correcting traffic signal timing, providing information to travelers about expected delays, and allowing SDOT to meet traffic records and reporting requirements)—but it's not clear this list is exhaustive. Section 2.1 fails to describe the purpose of use, all the types of information Acyclica provides, and all the types of work that Acyclica technology facilitates. All these must be clarified.

- *Lack of Clarity on Whether Acyclica and SDOT have a Written Contract.* The SIR does not state that any contract exists, and in the 2018 conversation ACLU-WA had with Benhammou, he stated that there was no contract between the two parties. However, at the 2019 technology fair, the SDOT representative affirmatively stated that SDOT has a contract with Acyclica. As previously mentioned, the lack of a contract limits SDOT's ability to restrict the scope of data sharing and repurposing. The only contractual document provided appears to be a terms sheet in Section 3.0 detailing SDOT's terms of service with Western Systems (the hardware vendor that manufactures the Acyclica RoadTrend sensors), which states that Western Systems only deals with the maintenance and replacement of the hardware used to gather the data, and not the data itself.

- *Lack of Clarity on Data Ownership.* At the technology fair, the SDOT representative stated that SDOT owns all the data collected (including the raw data), but the SIR only states that the aggregated traffic data is owned by SDOT. In the 2018 conversation, Benhammou stated that Acyclica owns all the raw data. There is an apparent lack of clarity between SDOT and Acyclica concerning ownership of data that must be addressed.

- *Data Retention Periods are Unclear.* Section 5.2 of the SIR states that there is a 10-year internal deletion requirement for the aggregated traffic data owned by SDOT, but pg. 37 of the SIR states that "the data is deleted within 24 hours to prevent tracking devices over time." In the 2018 interview, Benhammou stated that Acyclica retains all non-aggregated data indefinitely. It is unclear whether the different retention periods stated in the SIR are referring to different types of data. The lack of clarity on data retention periods also relates to the lack of clarity on data ownership given that data retention periods may depend on data ownership.

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[10] As noted in 1. Acyclica – SDOT *Background* above.

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- *Inaccurate Descriptions of Anonymization/Data Security Practices.* The SIR appears to use the terms "encryption" and "hashing" interchangeably in some parts of the SIR, making it difficult to clearly understand Acyclica's practices in this area. For example, Section 7.2 states: "Contractually, Acyclica guarantees that the data gathered is encrypted to fully eliminate the possibility of identifying individuals or vehicles." But by design, encryption allows for decryption with a key, meaning anyone with that key and access to the data can identify individuals. (Also, if there is no contract between SDOT and Acyclica, the use of 'contractually' is misleading). This language is also used in the terms sheet detailing SDOT's contract with Western Systems (in Section 2.5.1 in the embedded contract). The SIR compounds this confusion with additional contradictory statements. For example, the SIR states in multiple sections that the data collected by the RoadTrend sensors are encrypted and hashed on the actual sensor. However, according to a letter from Benhammou provided by SDOT representatives at the technology fair,[11] the data is never hashed on the sensor—the data is only hashed after being transmitted to Acyclica's cloud server. These contradictory descriptions cause concern.

- *No Restrictions on Non-City Data Use.* Section 6.3 of the SIR states that there are no restrictions on non-City data use. However, there are no policies cited making clear the criteria for such use, any inter-agency agreements governing sharing of Acyclica data with non-City parties, or why the data must be shared in the first place.

- *Not All Locations of Acyclica Devices are Specified.* Section 2.1 of the SIR states that there are 301 Acyclica locations in Seattle. However, in the embedded excel sheet detailing the serial numbers and specific intersections in which Acyclica devices are installed, there are 389 serial numbers, but only 300 addresses/locations specified. The total number and the locations of Acyclica devices collecting data in Seattle is unclear. This gives rise to the concern that there are unspecified locations in which Acyclica devices are collecting MAC addresses.

- *No Mention of RoadTrend Sensor Discontinuation.* As noted in the background,[12] Acyclica has been acquired by FLIR, an infrared and thermal imaging company. As of March 2019, FLIR's product webpage states that the Acyclica RoadTrend sensors (those currently used by SDOT) have been discontinued.[13] From the information we have, it is unclear if SDOT will be able to continue using the RoadTrend sensors described in the 2019 SIR. Given that FLIR sensors, such as the TrafiOne, have capabilities that go much farther than those of the

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[11] Included in Appendix 1.
[12] As noted in 1. Acyclica – SDOT *Background* above.
[13] https://www.flir.com/support/products/roadtrend#Specifications

RoadTrend sensors (e.g., camera technology and thermal imaging)[14] as well as potentially different technical implementations, their use would give rise to even more serious privacy and misuse concerns. Neither the implications of the FLIR acquisition nor the discontinuation of the RoadTrend sensors are mentioned in the SIR.

- *No Mention of Protecting MAC Addresses of Non-Drivers/Riders (e.g., people in nearby buildings).* The Acyclica sensors will pick up the MAC addresses of all nearby individuals, regardless of whether they are or are not driving or riding in a vehicle. The SIR does not mention any steps taken to reduce the privacy infringements on non-drivers/riders.

b. *Outstanding Questions That Must be Addressed in the Final SIR:*

- For what specific purpose or purposes will Acyclica be used, and what policies state this?

- Does SDOT have a contract with Acyclica, and if so, why is the contract not included in the SIR?

- Who owns the raw, non-aggregated data collected by Acyclica devices?

- What is the retention period for the different types of collected data (aggregated and non-aggregated)—for both SDOT and Acyclica?

- Provide accurate descriptions of Acyclica's data security practices, including encryption and hashing, consistent with the letter from Daniel Benhammou, including any additional practices that prevent reidentification.

- What third parties will access Acyclica's data, for what purpose, and under what conditions?

- Why are 89 locations not specified in the embedded Acyclica locations sheet in Section 2.1 of the SIR?

- Will SDOT continue to use Acyclica RoadTrend Sensors, and for how long? If SDOT plans to switch to other sensors, which ones, and how do their capabilities differ from the RoadTrend Sensors?

- Did SDOT consider any other alternatives when deciding to acquire Acyclica? Did SDOT consider other, more privacy protective traffic management tools in use (for example, inductive-loop detectors currently used by the Washington State Department of Transportation and the US

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[14] https://www.flir.com/support/products/trafione#Resources

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Department of Transportation)?[15]

- How does SDOT plan to reduce the privacy infringements on non-drivers/riders?

c. Recommendations for Regulation:

At this stage, pending answers to the questions set forth above, we can make only preliminary recommendations for regulation of Acyclica. We recommend that the Council adopt, via ordinance, clear and enforceable rules that ensure, at a minimum, the following:

- There must be a binding contract between SDOT and Acyclica.

- The contract between SDOT and Acyclica must include the following minimum provisions:

  o A data retention period of 12 hours or less for any data Acyclica collects, within which time Acyclica must aggregate the data, submit it to SDOT, and delete both non-aggregated and aggregated data.

  o SDOT receives only aggregated data.

  o SDOT owns all data, not Acyclica.

  o Acyclica cannot share the data collected with any other entity besides SDOT for any purpose.

- The ordinance must define a specific purpose of use for Acyclica technology, and all use of the tool and its data must be restricted to that purpose. For example: Acyclica may only be used for traffic management purposes, defined as activities concerning calculating average travel times, regulating traffic signals, controlling traffic disruptions, determining the placement of barricades or signals for the duration of road incidents impeding normal traffic flow, providing information to travelers about traffic flow and expected delays, and allowing SDOT to meet traffic records and reporting requirements.

- SDOT must produce an annual report detailing its use of Acyclica, including details how SDOT used the data collected, the amount of data collected, and for how long it was retained and in what form.

II.   CopLogic – SPD

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[15] https://www.fhwa.dot.gov/publications/research/operations/its/06108/03.cfm

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Background

CopLogic (LexisNexis's Desk Officer Reporting System-DORS)[16] is a technology owned by LexisNexis and used by the Seattle Police Department to allow members of the public and retailers to submit online police reports regarding non-emergency crimes. Members of the public and retailers can submit these reports through an online portal they can access via their phone, tablet, or computer. Community members can report non-emergency crimes that have occurred within the Seattle city limits, and retail businesses that participate in SPD's Retail Theft Program may report low-level thefts that occur in their businesses when they have identified a suspect. This technology is used by SPD for the stated purpose of freeing up resources in the 9-1-1 Center, reducing the need for a police officer to be dispatched for the sole purpose of taking a police report.

This technology gives rise to potential civil liberties concerns because it allows for the collection of information about community members, unrelated to a specific incident, and without any systematic method to verify accuracy or correct inaccurate information. In addition, there is lack of clarity surrounding data retention and data sharing by LexisNexis, and around how CopLogic data will be integrated into SPD's Records Management System.

a. *Concerns*

- *Lack of Clarity on CopLogic/LexisNexis Data Collection and Retention.* There is no information in the SIR or in the contract between SPD and LexisNexis detailing the data retention period by LexisNexis (Section 5.2 of the SIR). This lack of clarity stems in part from an unclear description of what's provided by LexisNexis—it's described as an online portal, but the SIR and the contract provided appears to contemplate in Section 4.8 that LexisNexis will indeed access and store collected data. If true, the nature of that access should be clarified, and data restrictions including clear access limitations and retention periods should accordingly be put in place. Once reports are transferred over to SPD's Records Management System (RMS), the reports should be deleted by CopLogic/LexisNexis.

- *Lack of Clarity on LexisNexis Data Sharing with Other Agencies or Third Parties.* If LexisNexis does access and store data, it should do so only for purposes of fulfilling the contract, and should not share that data with third parties. But the contract between SPD and LexisNexis does not make clear whether LexisNexis is prohibited entirely from sharing data with other entities (it does contain a restriction on "transmit[ting]" the data, but without reference to third parties.

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[16] https://risk.lexisnexis.com/products/desk-officer-reporting-system

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- *No Way to Correct Inaccurate Information Collected About Community Members.* Community members or retailers may enter personally-identifying information about third parties without providing notice to those individuals, and there is no immediate, systematic method to verify the accuracy of information that individuals provide about third parties. There are also no stated measures in the SIR to destroy improperly collected data.

- *Lack of clarity on how the CopLogic data will be integrated with and analyzed within SPD's RMS.* At the technology fair, SPD stated that completed complaints will go into Mark43[17] when it is implemented. ACLU-WA has previously raised concerns about the Mark43 system, and it should be made clear how CopLogic data will enter that system, including to what third parties it will be made available.[18]

b. *Outstanding Questions That Must be Addressed in the Final SIR:*

- What data does LexisNexis collect and store via CopLogic? What are LexisNexis's data retention policies for CopLogic data?

- Are there specific policies restricting LexisNexis from sharing CopLogic data with third parties? If so, what are they?

- Is there any way to verify or correct inaccurate information collected about community members?

- How will CopLogic data be integrated with Mark43?

c. *Recommendations for Regulation:*

Pending answers to the questions set forth above, we can make only preliminary recommendations for regulation of CopLogic. SPD should adopt clear and enforceable policies that ensure, at a minimum, the following:

- After CopLogic data is transferred to SPD's RMS, LexisNexis must delete all CopLogic data.

- LexisNexis is prohibited from using CopLogic data for any purpose other than those set forth in the contract, and from sharing CopLogic data with third parties.

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[17] https://www.aclu-wa.org/docs/aclu-letter-king-county-council-regarding-mark-43
[18] A Records Management System (RMS) is the management of records for an organization throughout the records-life cycle. New RMSs (e.g., Mark43) may have capabilities that allow for law enforcement agencies to track and analyze the behavior of specific groups of people, leading to concerns of bias in big data policing, particularly for communities of color.

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- Methods are available to the public to correct inaccurate information entered in the CopLogic portal.

- Measures are implemented to delete improperly collected data.

III.   Computer-Aided Dispatch & 911 Logging Recorder Group

Overall, concerns around the Computer-Aided Dispatch (CAD) and 911 Logging Recorder technologies focus on use of the technologies and/or collected data them for purposes other than those intended, over-retention of data, and sharing of that data with third parties (such as federal law enforcement agencies). Therefore, for all of these technologies as appropriate, we recommend that the responsible agency should adopt clear and enforceable rules that ensure, at a minimum, the following:

- The purpose of use must be clearly defined, and its operation and data collected must be explicitly restricted to that purpose only.

- Data retention must be limited to the time needed to effectuate the purpose defined.

- Data sharing with third parties, if any, must be limited to those held to the same restrictions.

- Clear policies must govern operation, and all operators should be trained in those policies.

Specific comments follow:

1. Computer-Aided Dispatch – SPD

Background

CAD is a software package (made by Versaterm) utilized by the Seattle Police Department's 9-1-1 Center that consists of a set of servers and software deployed on dedicated terminals in the 9-1-1 center, in SPD computers, and as an application on patrol vehicles' mobile data computers and on some officers' smart phones. The stated purpose of CAD is to assist 9-1-1 Center call takers and dispatchers with receiving requests for police services, collecting information from callers, and providing dispatchers with real-time patrol unit availability. Concerns include lack of clarity surrounding data retention and data sharing with third parties.

a. Concerns:

- *Lack of clarity on data retention within CAD v. RMS.* While the SIR makes clear that at some point, CAD data is transferred to SPD's RMS, it is unclear what data, if any, the CAD system itself retains and for how long. If the CAD system does retain some data (for example, call logs)

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independent of the RMS, and that data is accessible to the vendor, appropriate data protections should be put in place. But because the SIR usually references "data collected by CAD," it is unclear where that data resides.

- *Lack of a policy defining purpose of the technology and limiting its use to that purpose*: Unlike SFD's similar system, SPD appears to have no specific policy defining the purpose of use for CAD and limiting its use to that purpose.

b. *Outstanding Questions That Must be Addressed in the Final SIR:*

- Does the CAD system itself store data? If so, what data and for how long? Who can access that data?

c. *Recommendations for Regulation:*

Depending on the answer to the question above, appropriate data protections may be needed as described above. In addition, SPD should adopt a policy similar to SFD's, clearly defining purpose and limiting use of the tool to that purpose.

2. Computer-Aided Dispatch – SFD

Background

Computer Aided Dispatch (CAD) is a suite of software packages used by SFD and made by Tritech that provide unit recommendations for 911 emergency calls based on the reported problem and location of a caller. The stated purpose of CAD is to allow SFD to manage emergency and non-emergency call taking and dispatching operations. The technology allows SFD to quickly enable personnel to execute rapid aid deployment.

Generally and positively, SFD clearly defines the purpose of use, restricts CAD operation and data collection to that purpose only, limits sharing with third parties, and specifies policies on operation and training. However, SFD must clarify what data is retained within CAD, data retention policies, and provide information about its data sharing partners.

d. *Concerns*

- *Lack of clarity on data retention within CAD*. It is unclear what data, if any, the CAD system itself retains and for how long. If the CAD system does retain some data (for example, call logs) and that data is accessible to the vendor, appropriate data protections should be put in place.

- *Lack of clarity on data retention policies*. At the technology fair, we learned that CAD data is retained indefinitely. It is not clear what justifies indefinite retention of this data.

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- *Lack of clarity on data sharing partners.* In Section 6.3 of the SIR, SFD states that in rare case where CAD data is shared with partners other than those specifically named in the SIR, a third-party nondisclosure agreement is signed. However, there are no examples or details of who those partners are and the purposes for which CAD data would be shared.

e. *Outstanding Questions That Must be Addressed in the Final SIR:*

- Does the CAD system itself store data? If so, what data and for how long? Who can access that data?
- Who are SFD's data sharing partners? For what purpose is data shared with them?

f. *Recommendations for Regulation:*

Depending on the answer to the question regarding if the CAD system itself stores data, appropriate data protections may be needed as described above. SFD should adopt a clear policy requiring deletion of CAD data no longer needed. In addition, depending on how data is shared, SFD should adopt a policy that clearly limits what for what purposes CAD data would be shared, and with what entities.

3. 911 Logging Recorder – SPD

Background

The NICE 911 logging recorder is a technology used by SPD to audio-record all telephone calls to SPD's 9-1-1 communications center and all radio traffic between dispatchers and patrol officers. The stated purpose of the 9-1-1 Logging Recorder is to allow SPD to provide evidence to officers and detectives who investigate crimes and the prosecutors who prosecute offenders. These recordings also provide transparency and accountability for SPD, as they record in real time the interactions between 9-1-1 call takers and callers, and the radio traffic between 9-1-1 dispatchers and police officers. The NICE system also supports the 9-1-1 center's mission of quickly determining the nature of the call and getting the caller the assistance they need as quickly as possible with high quality, consistent and professional services.

Concerns include lack of clarity surrounding data retention schedules and data sharing with third parties.

a. *Concerns*

- *Lack of clarity on data retention.* Section 4.2 of the SIR states: "Recordings

requested for law enforcement and public disclosure are downloaded and maintained for the retention period related to the incident type." Similar to other technologies noted above, it is unclear whether the 9-1-1 system itself stores these recordings, or if they are stored on SPD's RMS. If the former, it should be made clear how the technology vendor accesses these recordings and for what purpose, if at all.

- *More clarity needed on data sharing with third parties.* There are no details or examples of the "discrete pieces of data" that are shared outside entities and individuals as referenced in Section 6.0 of the SIR.

b. Outstanding Questions That Must be Addressed in the Final SIR:

- What is SPD's data retention schedule for data stored in the NICE system, if any?

- What "discrete pieces of data" does SPD share with third parties?

c. Recommendations for Regulation:

SPD should adopt a clear policy requiring deletion of data no longer needed. In addition, depending on how data is shared, SPD should adopt a policy that clearly limits what for what purposes data would be shared, and with what entities.

IV.   Current Diversion Technology Group – Seattle City Light

The technologies in this group—the Check Meter device (SensorLink TMS), the SensorLink Amp Fork, and the Binoculars/Spotting Scope raise civil liberties concerns primarily due to lack of explicit, written policies imposing meaningful restrictions on use of the technologies. While the purpose of the current diversion technologies appears clear—to assess whether suspected diversions of current have occurred and/or are continuing to occur—there are no explicit policies in the SIR detailing restrictions on what can and cannot be recorded by these technologies.

Below are short descriptions of the technologies, followed by concerns and recommendations.

Background

1.   Check Meter Device (SensorLink TMS)

The SensorLink TMS device measures the amount of City Light-provided electrical energy flowing through the service-drop wire over time, digitally capturing the instantaneous information on the device for later retrieval by the Current Diversion Team via the use of a secure wireless protocol.

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The stated purpose of use is to allow Seattle City Light to maintain the integrity of its electricity distribution system, to determine whether suspected current diversions have taken place, and to provide the valuation of the diverted energy to proper authorities for cost recovery.

2. SensorLink Amp Fork

The SensorLink Amp Fork is an electrical device mounted on an extensible pole allowing a circular clamp to be placed around the service-drop wire that provides electrical service to a customer location via its City Light-provided meter. The device then displays instantaneous readings of the amount of electrical energy (measured in amperage, or "amps") that the Current Diversion Team may compare against the readings displayed on the meter, allowing them to determine if current is presently being diverted.

The stated purpose of use of the Amp Fork is to allow Seattle City Light to assess whether suspected diversions of current have occurred and/or are continuing to occur. The Amp Fork allows the Utility to determine the valuation of the energy illegally diverted, which supports City Light's mission of recovering this value for ratepayers via a process called "back-billing."

3. Binoculars/Spotting Scope

The binoculars are standard, commercial-grade, unpowered binoculars. They do not contain any special enhancements requiring power (e.g., night-vision or video-recording capabilities). They are used to read a meter from a distance when the Current Diversion Team is otherwise unable to access physically the meter for the purpose of inspection upon suspected current diversion.

The stated purpose of the binoculars is to allow Seattle City Light to inspect meters and other implicated electrical infrastructure at a distance. If a determination of diversion is sustained, data may be used to respond to lawful requests from the proper law enforcement authorities for evidence for recovering the value of the diverted energy.

a. Concerns Regarding all Three Current Diversion Technologies

- *Absence of explicit, written policies imposing meaningful restrictions on use.* At the technology fair, a Seattle City Light representative stated that these technologies are used only for the purpose of checking current diversions, but could not confirm that Seattle City Light had clear, written policies for what data could and could not be recorded (e.g., an employee using the binoculars to view non-meter related information). The absence of written, specific policies increases the risk of unwarranted surveillance of individuals. There is also no mention in the SIRs of

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specific data protection policies in place to safeguard the data (e.g., encryption, hashing, etc.).

- *Seattle City Light's records retention schedule is mentioned in the SIRs, but details about it are omitted.* It is unclear how long Seattle City Light retains data collected, and for what reason.

b. *Outstanding Questions That Must be Addressed in the Final SIR:*

- What enforceable policies, if any, apply to use of these three technologies?

- What is Seattle City Light's data retention schedule?

c. *Recommendations for Regulation:*

Seattle City Light must create clear, enforceable policies that, at a minimum:

- Define purpose of use for each technology and restrict its use to that purpose.

- Clearly state what clear data protection policies exist to safeguard stored data, if any, and ensure the deletion of data collected by the technology immediately after the relevant current diversion investigation has closed.

Thank you for your consideration, and please don't hesitate to contact me with questions.

Best,

Shankar Narayan
Technology and Liberty Project Director

Jennifer Lee
Technology and Liberty Project Advocate

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Appendix 1: Benhammou Letter

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Acyclica

February 6th, 2015

RE: Acyclica data privacy standards

To whom it may concern:

The purpose of this letter is to provide information regarding the data privacy standards maintained by Acyclica. Acyclica is a traffic information company specializing in traffic congestion information management and analysis. Among the various types of data sources which make of Acyclica's traffic data portfolio including GPS probe data, video detection and inductive loops, Acyclica also utilizes our own patent-pending technology for the collection of Bluetooth and Wifi MAC addresses. MAC or Media Access Control addresses are unique 48-bit numbers which are associated with devices with Bluetooth and/or Wifi capable devices.

While MAC addresses themselves are inherently anonymous, Acyclica goes to great lengths to further obfuscate the original source of data through a combination of hashing and encryption to all but guarantee that information derived from the initial data bears no trace of any individual.

Acyclica's technology for collecting MAC addresses for congestion measurement operates by detecting nearby MAC addresses. The MAC addresses are then encrypted using GPG encryption before being transmitted to the cloud for processing. Encrypting the data prior to transmission means that no MAC addresses are ever written where they can be retrieved from the hardware. Once the data is received by our servers, the data is further anonymized using a SHA-256 algorithm which makes the raw MAC address nearly impossible to decipher from the hashed output. Furthermore, any customer seeking to download data for further investigation or integration through our API can only ever view the hashed MAC address.

Acyclica occasionally provides data to partners to help enhance the quality of congestion information. The information which is provided to such partners is received through API calls which only return aggregated information about traffic data over a given period such as the average travel-time over a 5-minute period. Aggregating the data provides a final layer of anonymization by reporting on the collective trend of all vehicles rather than the specific behavior of a single vehicle.

As always questions, comments and concerns are welcome. Please do let me know if we can provide further clarity and transparency on our internal operations with regards to data processing and privacy standards. We take the privacy of the public very seriously and always treat our customers and the data with the utmost respect.

Regards,

Daniel Benhammou
President
Acyclica Inc.

Appendix H: Comment Analysis Methodology

Overview

The approach to comment analysis includes combination of qualitative and quantitative methods. A basic qualitative text analysis of the comments received, and a subsequent comparative analysis of results, were validated against quantitative results. Each comment was analyzed in the following ways, to observe trends and confirm conclusions:

1. Analyzed collectively, as a whole, with all other comments received
2. Analyzed by technology
3. Analyzed by technology and question

A summary of findings are included in Appendix B: Public Comment Demographics and Analysis. All comments received are included in Appendix E: All Individual Comments Received.

Background on Methodological Framework

A modified Framework Methodology was used for qualitative analysis of the comments received, which "…*approaches [that] identify commonalities and differences in qualitative data, before focusing on relationships between different parts of the data, thereby seeking to draw descriptive and/or explanatory conclusions clustered around themes*" (Gale, N.K., et.al, 2013). Framework Methodology is a coding process which includes both inductive and deductive approaches to qualitative analysis.

The goal is to classify the subject data so that it can be meaningfully compared with other elements of the data and help inform decision-making. Framework Methodology is "not designed to be representative of a wider population, but purposive to capture diversity around a phenomenon" (*Gale, N.K., et.al, 2013).*

Methodology

Step One: Prepare Data

1. Compile data received.
    a. Daily collection and maintenance of 2 primary datasets.
        i. Master dataset: a record of all raw comments received, questions generated at public meetings, and demographic information collected from all methods of submission.
        ii. Comment analysis dataset: the dataset used for comment analysis that contains coded data and the qualitative codebook. The codebook contains the qualitative codes used for analysis and their definitions.
2. Clean the compiled data.
    a. Ensure data is as consistent and complete as possible. Remove special characters for machine readability and analysis.
    b. Comments submitted through SurveyMonkey for "General Surveillance" remained in the "General Surveillance" category for the analysis, regardless

of content of the comment. Comments on surveillance generally, generated at public meetings, were categorized as such.

    c. Filter data by technology for inclusion in individual SIRs.

Step Two: Conduct Qualitative Analysis Using Framework Methodology

1. Become familiar with the structure and content of the data. This occurred daily compilation and cleaning of the data in step one.
2. Individually and collaboratively code the comments received, and identify emergent themes.
    I. Begin with deductive coding by developing pre-defined codes derived from the prescribed survey and small group facilitator questions and responses.
    II. Use clean data, as outlined in Data Cleaning section above, to inductively code comments.
        A. Each coder individually reviews the comments and independently codes them.
        B. Coders compare and discuss codes, subcodes, and broad themes that emerge.
        C. Qualitative codes are added as a new field (or series of fields) into the Comments dataset to derive greater insight into themes, and provide increased opportunity for visualizing findings.
    III. Develop the analytical framework.
        A. Coders discuss codes, sub-codes, and broad themes that emerge, until codes are agreed upon by all parties.
        B. Codes are grouped into larger categories or themes.
        C. The codes are be documented and defined in the codebook.
    IV. Apply the framework to code the remainder of the comments received.
    V. Interpret the data by identifying differences and map relationships between codes and themes, using R and Tableau.

Step Three: Conduct Quantitative Analysis

1. Identify frequency of qualitative codes for each technology overall, by questions, or by themes:
    I. Analyze results for single word codes.
    II. Analyze results for word pair codes (for context).
2. Identify the most commonly used words and word pairs (most common and least common) for all comments received.
    I. Compare results with qualitative code frequencies and use to validate codes.
    II. Create network graph to identify relationships and frequencies between words used in comments submitted. Use this graph to validate analysis and themes.

3. Extract CSVs of single word codes, word pair codes, and word pairs in text of the comments, as well as the corresponding frequencies for generating visualizations in Tableau.

Step Four: Summarization

1. Visualize themes and codes in Tableau. Use call out quotes to provide context and tone.
2. Included summary information and analysis in the appendices of each SIR.

Appendix I: Supporting Policy Documentation

The following supporting documentation can be found on the following pages:

- Western Systems Contract

- SDOT Record Retention Schedule

- Western Systems Terms and MOU

- SDOT Data Ownership

- EDI DA-300 Data Sheet

- Acyclica Travel Time Accuracy & Reliability Analysis
- Seattle Security Assurance Request

ALERTS
This contract is not intended for anything that is more properly classified as Public Works. This contract is limited to only those items expressly provided for in this contract. Do not use for federally funded purchases without a specific review for your grant funding requirements.

Contract Title: **Traffic Data as a Service**			Contract # **0000003493**
Procurement Strategic Advisor	Name: Marlon R. Franada	Phone: 206-684-4515	E-Mail: marlon.franada@seattle.gov
Vendor	Name: **Western Systems INC.**		ID# 0000123998
Vendor Address	Street: 1122 Industry St. Bldg. B Everett, WA		Zip 98203
Vendor Contact	Name: Zachary L. Hoiting		
	Phone: 425-438-1133	Fax: 425-438-1585	E-Mail: zhoiting@westernsystems.com
WMBE Status	No WMBE ownership		
Description	This contract is a result of ITB# SDOT # 3456		
Contract Term	07/01/2015 through 06/30/2020		
Future Extension Option	1 additional 2 year period		
Freight Terms	NA		
Prompt Pay Discount	NA		
Delivery ARO			
Order Instructions	All City Departments	Order Limit: N/A	
Contracting Options	☐This is the only City contract for this product. Unless a separate competitive process is undertaken, this contract must be used when a product is sought that matches contract offerings. Call the Buyer for advice. ☒This is one of several contracts awarded for this product. The City may select among any of the following: 3456 – Digiwest LLC 3494 – IDAX 3492 – Quality Counts		
Contract Change History	Contract Start Date: 07/01/2015		
	Change Order #1 –		
	Change Order #2 –		
	Change Order #3 –		
	Change Order #4 –		

Comprehensive Contract	Current Pricing	Original ITB/RFP
 0000003493va.pdf		 ITB# SDOT 3456 Traffic Data031815.d

Vendor Emergency Contact Information	
Emergency Contact Name	Zachary L. Hoiting
Emergency Phone Number	425-438-1133
Back-Up Emergency Phone Number	
Contact information for company locations areas outside Seattle that can be called upon in an emergency Alternative Address	

VENDOR CONTRACT

The City of Seattle
PURCHASING AND CONTRACTING SERVICES
700 - 5ᵗʰ Ave Suite 4112
P.O. Box 94687
Seattle, WA 98124-4687

Vendor Contract #		Date	Change Order #
0000003493		06/24/2015	
Payment Terms	Freight Terms		
Net 30	FOB: Destination; Prepaid & Allowed		
Buyer:		FAX:	Phone:
Rick Davison		206-233-5155	206-684-8310

Vendor #: 0000123998
Western Systems Inc.
1122 Industry St. Bldg. B
Everett, WA 98203

Contact: Zachary L. Hoiting
Phone #: 425-438-1133
Fax #: 425-438-1585
E-mail: zhoiting@westernsystems-inc.com

Ship To:

CITY DEPARTMENTS

Bill To:

SEE BELOW

Western Systems Inc. is awarded a contract to provide Traffic Data as a Service in accordance with solicitation ITB # SDOT 3456 and City of Seattle Terms and Conditions. The ITB, City of Seattle Terms and Conditions and Vendor's response Attachment A, including all promises, warranties, commitments and representations made in the successful Bid, shall be binding and incorporated by reference in the City's contract with the Vendor.

Original Term:
Contract Period: 07/01/2015 through 06/30/2020 with option to extend 1 additional 2 year period as mutually agreed.

The City does not guarantee utilization of this contract. The City may award contracts to other vendors for similar products or services.

Orders shall be placed by DEPARTMENT REPRESENTATIVES. Invoices shall be mailed in duplicate to the DEPARTMENT PLACING THE ORDER, Attn: Accounts Payable, as above. **Each invoice shall indicate Contract #0000003493.**

Authorized Signature/Date

Pam Tokunaga 6/30/15

City of Seattle ITB# SDOT 3456
Traffic Data as a Service
Financial Response

Provide pricing details below to meet full compliance of scope and requirements as defined in Section 5.
This shall include everything necessary to complete system implementation.

List any pricing assumptions and/or notes below the spreadsheet

Attach a list of of Optional Modules that may be available (This will not be part of price evaluation)

	Project Component	Unit Price ($/node)	Included in Basic Data Package (Yes/No)	Included in Enhanced Data Package (Yes/No)	Included in 3rd party Data Package
M1	**Minimum Data Elements Supplied**				
	Basic Data Package	$1,000	Yes	No	No
	Enhanced Data Package	$1,200	Yes	Yes	No
	Third Party Data Package	$500	No	No	Yes
M1.1	Mean travel time per direction by link in seconds to the nearest 1 second. All data elements related to a link must be supplied as defined in "TIM Travel Time Data Format Specification", sections D1 and D2.	included	Yes	Yes	
	Meta data describing each travel time collection point. All data items must be supplied as defined in "TIM Travel Time Data Format Specification", sections E1, E2 and E3.	included	Yes	Yes	
M1.2	Origin-Destination by node	included	Yes	Yes	
M5	**Analytics Platform**				
M5.1	A web-based analytics platform shall be supplied.	included	Yes	Yes	

GetTTDBRouteSegmentStationList

```xml
<?xml version="1.0" encoding="utf-8"?>
<TTDBRouteSegmentStationList xmlns=" ">
  <TTDBRoutes>
    <TTDBRoute>
      <name>Sample route name</name>
      <numberofsegmentsinroute>1</numberofsegmentsinroute>
      <TTDBSegments>
        <TTDBSegment>
          <name>SEAlrCS131:SEAlrFS151:GPS_Seg</name>
          <upstreamTTDBStation>
            <name>SEAlrCS131</name>
            <location>location description</location>
          </upstreamTTDBStation>
          <downstreamTTDBStation>
            <name>SEAlrFS151</name>
            <location>location description</location>
          </downstreamTTDBStation>
        </TTDBSegment>
      </TTDBSegments>
    </TTDBRoute>
  </TTDBRoutes>
  <TTDBSegmentsNotAssociatedWithARoute>
    <TTDBSegment>
      <name>SEAlrCS131:SEAlrFS151:GPS_Seg</name>
      <upstreamTTDBStation>
        <name>SEAlrCS131</name>
        <location>location description</location>
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        <name>SEAlrFS151</name>
        <location>location description</location>
      </downstreamTTDBStation>
    </TTDBSegment>
  </TTDBSegmentsNotAssociatedWithARoute>
  <TTDBStationsNotAssociatedWithASegment>
    <TTDBStation>
      <name>SEAlrFS151</name>
      <location>location description</location>
    </TTDBStation>
  </TTDBStationsNotAssociatedWithASegment>
</TTDBRouteSegmentStationList>
```

M5.2	The analytics platform shall be supplied at no additional cost. There shall be no per user fees, licenses, or other costs for the analytics platform.	included	Yes	Yes
M5.3	The vendor shall ensure adequate internet and server capacity for their analytics platform to provide 99.9% availability of the analytics platform.	included	Yes	Yes
M6	**Installation Requirements**			
M6.1	System power source - 110 VAC	$ -	n/a	
M6.1	System power source - Solar option	$ 6,000.00	n/a	
M6.2	System communications network.	$ 725.00	n/a	
M6.3	Permitting cost	$ 500.00	n/a	
M6.4	Other costs (such as sensor installation, please specify)	$ 200.00	n/a	
M6.5	Initial data element qualification costs	$ -	n/a	
D1	**Enhanced Data Elements Supplied**			
D1.1	Mean travel speed per direction per link in miles per hour (mph) to the nearest 1 mph.	included	yes	Yes
D1.2	Mean travel speed per lane per direction per link in miles per hour (mph) to the nearest 1 mph.	included	yes	Yes
D1.3	Total intersection delay aggregate in maximum 5 minute increments	included	No	Yes
D1.4	Intersection delay by movement aggregated in maximum 5 minute increments	included	No	Yes
D1.5	Traffic volume per direction per link in VPH, aggregated in maximum 5 minute increments	$	No	No
D1.6	Traffic volume per lane per direction per link in VPH, aggregated in maximum 5 minute increments	$	No	Yes
D1.7	Volume/occupancy per direction per link, aggregated in maximum 5 minute increments	$	No	Yes
D1.8	Volume/occupancy per lane per direction per link, aggregated in maximum 5 minute increments	$	No	Yes
D1.9	Provide travel time data by mode, including for transit, freight, pedestrian, and bicycle modes.	$	No	Yes

ID	Description				
D1.10	Provide travel speed data by mode, including for transit, freight, pedestrian, and bicycle modes.	$	No	No	Yes
D1.11	Provide traffic volume data by mode, including for transit, freight, pedestrian, and bicycle modes.	$	No	No	Yes
D1.12	Provide volume/ occupancy data by mode, including for transit, freight, pedestrian, and bicycle modes.	$	No	No	Yes
D1.13	Provide origin-destination data by mode, including for transit, freight, pedestrian, and bicycle modes.	$	No	No	Yes
D5	**Data Analytics Platform**				
D5.1	The data analytics platform shall provide for (meaning the function shall be supplied without requiring any modifications by SDOT) the incorporation of other SDOT-supplied data.	included	No	Yes	
D5.2	A data archive service shall be provided, which shall maintain the data in the provided real-time interval for a minimum of 3 years, and aggregated in 15 minute increments thereafter.	included	Yes	Yes	
D5.3	The data archive shall maintain the data for a minimum of 3 years in the real-time format.	included	Yes	Yes	
D5.4	After 3 years, that data shall be aggregated into 15-minute increments and supplied to SDOT for their storage.	included	Yes	Yes	
D5.5	The stored data shall not contain information that can be used to track an individual or an individual vehicle.	included	Yes	Yes	

Pricing Assumptions and notes:

- The enhanced data package includes all features of the basic data package. The price for the enhanced data package is no additive, meaning that if the enhanced data package is purchased, the user does not also need the basic data package. Third Party Package is in addition to the Basic Data Package and/or Enhanced.B9

- The solar power option is provided as a reference in case power is not available within the cabinet. The default power option is assumed to be 110V AC power from the cabinet at which point there is no cost for power.

Attachment A

Authorized Signature: _____

Printed Name: __Zachary L. Hoiting__

Date: ___4/15/2015___

Attachment A

Yes: _x_____

This section shall not be used in the evaluation of bids, but will be used to administer wage increases if necessary due to prevailing wage changes over the life of the contract. Since prevailing wages may require the Vendor to request an adjustment to costs billed to the City in future years, provide this remaining information to allow the City to receive and analyze cost increases that are the result of a prevailing wage increase:

Specify the Job Classification and Hourly Wage Rate that is reflected in your Offer for labor classifications that will perform the Services. :

Job Classification	Hourly Wage Rate
Technician	$100.00
	$
	$
	$
	$
	$
	$

By submitting this Bid, Vendor acknowledges he/she has read and understands the entire Invitation to Bid and agrees to comply with its terms and conditions. The Vendor also agrees to fulfill the offer made in their Bid through any subsequently awarded Contract.

Full Legal Name of Company: _Western Systems Inc._____

Terms and Conditions

1. **Entire Agreement.** This Contract comprises the entire agreement between the City of Seattle (Seattle) and the Contractor. The Contract is defined to explicitly include the City's Purchase Order/Vendor or Blanket Contract, the City's Solicitation and all Addendums and Vendor's Offer. Where there are conflicts between these documents, the controlling documents will be in that same sequence, with the first taking priority over the last listed.

2. **Mutual Acceptance:** This Contract has been accepted by both parties upon signature by the City of Seattle. The Contractor may provide an adjoining signature, or may indicate mutual acceptance by receiving the Contract from the City without objection. If the Contractor objects, the Contractor must provide immediate written notice to the City Purchasing Department upon receipt of the Contract.

3. **Term**: Any term specified in the solicitation or specification shall prevail. Should this be a one-time purchase, the Contract shall commence on the date the City's Buyer signs the same and shall expire sixty (60) days after delivery and acceptance of last item. If a Contract award, this contract shall be for the term specified in the solicitation, and if not specified shall be five years, with one two-year extension allowed at the option of the City. Such extensions shall be automatic, and shall go into effect without written confirmation, unless the City provides advance notice of the intention to not renew. The Contractor may provide also provide a notice to not extend, but must provide such notice at least 45 days prior to the otherwise automatic renewal date.

4. **Schedule**: Unless the City Buyer issues a written change, Contractor shall deliver the items or render the services by the due date or delivery schedule stated on the Contract. At the City's option, Contractor's failure to timely deliver or to perform may require expedited shipping at Contractor's expense, or may be cause for termination of the Contract and the return of all or part of the items at Contractor's expense. If Contractor anticipates difficulty in meeting the schedule, the Contractor shall promptly notify the City's Buyer of such difficulty and the length of the anticipated delay.

5. **Limits of Sales to Authorized Products and Services**: Contractor has responsibility to limit sales to those products or services authorized within the Contract, whether authorized by changes and amendments or stated within the original contract scope. The Contractor is responsible for refusing orders that are not properly authorized by the contract or through other proper Purchase Orders issued by authorized persons from the City. If the Contractor has consistent sales of unauthorized products or services, the City reserves the right to use any of the following: terminate the contract in accordance with termination provisions, place the Contractor payments on "hold" for all incoming invoices while the City determines which are authorized items eligible for payment, and/or refuse certain invoices that contain non-authorized items.

6. **Adjustments**: The City Buyer at any time may make reasonable changes in the place of delivery, installation or inspection; the method of shipment or packing; labeling and identification; extension of contract duration, and ancillary matters that Contractor may accommodate without substantial additional expense to the City.

7. **Changes and Expansion Authority:** No modification of this Contract shall be effective unless in writing and signed by an authorized representative of the City. The only person authorized to make amendments on behalf of the City is the designated Buyer from City Purchasing, Department of Finance and Administrative Services. . The City Buyer shall issue change notices to Contractor, and such notices shall take be considered to take effect and be mutually acceptable, upon sole signature of the City Buyer, unless timely written objection is received from the Contractor..

8. **Contract Expansion**: This contract may be expanded as mutually agreed, if such expansion is approved by the City Buyer. Expansions must be issued in writing from the City Buyer in a formal notice. The Buyer will ensure the expansion meets the following criteria collectively: (a) it could not be separately bid, (b) the change is for a reasonable purpose, (c) the change was not reasonably known to either the City or Contractors at time of bid or else was mentioned as a possibility in the bid (such as a change in environmental regulation or other law); (d) the change is not significant enough to be reasonably regarded as an independent body of work; (e) the change could not have attracted a different field of competition; and (f) the change does not vary the essential identity or main purpose of the contract. The Buyer shall make this determination, and may make exceptions for immaterial changes, emergency or sole source conditions, or for other situations as required in the opinion of the Buyer. Note that certain changes are not considered an expansion of scope, including an increase in quantities ordered, the exercise of options and alternates in the bid, or ordering of work originally identified within the originating solicitation. If such changes are approved, changes are conducted as a written order issued by the City Purchasing Buyer in writing to the Contractor.

9. **Invoices**: Invoices must show line item detail and price for each. Invoices must provide the name of the City employee that placed the order, and the Contract number. If the pricing structure is based upon a discount below list, or a mark-up above cost, then the Contractor must provide a method for tracking the cost of the item to the City, with the City discount calculation displayed so that pricing discounts

can be easily tracked and verified by the City. Seattle will not be bound by prices contained in an invoice that are higher than those in the contract. Unless the higher price has been accepted by the City and the contract amended, the invoice may be rejected and returned to the Contractor for corrections.

For contracts where prevailing wages are required, the Contractor must include a statement that certifies Prevailing Wages have been paid by the Contractor and subcontractors, if any.

10. **Delayed Invoice Submittal**: Invoices must be submitted to the City within 60 days, of either the date the City received, inspected and accepted delivery of all goods, the date the City accepted final completion of all services, or the date of receipt of a correct invoice, whichever date is later.

11. **Payment**: Seattle agrees to compensate as specified herein or attached, in consideration of acceptable Contractor performance. Payment shall only be made for services performed and/or product delivered, after receipt, review and authorization by the City. If the City is unable to pay within the period allowed for early payment discount the payment term will revert to net thirty (30) days after the City's receipt and acceptance of the goods or completion and acceptance of the services. Payment periods will be computed from the acceptance date after delivery of all goods, City acceptance after completion of all services, or the date of receipt of a correct invoice, whichever date is later. This section is not intended to restrict partial payments that are specified in the contract. All dollars referenced in this Contract and attachments are US Dollars. Also see "Dispute" section for payment of items in Dispute.

12. **Late Invoice Payment**: If the City pays an invoice after the 30 day allowance, the Contractor may charge the City no more than 1% interest calculated per month upon the total invoice amount. The Contractor is not entitled to any late fees or penalties for late payments. (Per RCW Chapter 39.76.011)

13. **Overages/Underage:** Shipments shall match the purchase order, any unauthorized advance or excess shipments are returnable at Contractors expense. The City is not obligated to return overages and will not pay for overages.

14. **Taxes, Fees and Licenses.**
Fees and Licenses: Contractor shall pay for and maintain in a current status, any license fees, assessments, permit charges, etc., which are necessary for contract performance. It is the Contractor's sole responsibility to monitor and determine any changes or the enactment of any subsequent requirements for said fees, assessments, or charges and to immediately comply with said changes during the entire term of this Contract. Contractor must pay all custom duties, brokerage or import fees where applicable as part of the contract price. Contractor shall take all necessary actions to ensure that materials or equipment purchased are expedited through customs.

Taxes: Where required by State statute, ordinance or regulation, Contractor shall pay for and maintain in current status all taxes that are necessary for contract performance. Unless otherwise indicated, Seattle agrees to pay State of Washington sales or use taxes on all applicable consumer services and materials purchased. No charge by the Contractor shall be made for federal excise taxes and Seattle agrees to furnish Contractor with an exemption certificate where appropriate.

Withholding payment for taxes/business license fees due the City of Seattle: If specified by Seattle Municipal Code the Director of the Department of Finance and Administrative Services may withhold payment due a City contractor pending satisfactory resolution of unpaid taxes and fees due the City.

Supplier is to calculate and enter the appropriate Washington State and local sales tax on the invoice. Tax is to be computed on new items after deduction of any trade-in, in accordance with WAC 458-20-247.

Rebate: If this Contract includes a rebate, the total rebate due to the City shall be paid in check to the City of Seattle, Department of Finance and Administrative Services (FAS), PO Box 94687, Seattle WA 98124-4687.

If the vendor agrees to Interlocal Agreement Sales on the Offer Form, sales conducted within this contract authority to other jurisdictions shall also incur the rebate which shall be calculated and paid to the City of Seattle, unless the City instructs the vendor otherwise through written notice. For the first year, rebates will be made for total payments made to the Vendor under this Contract, starting from the date of Contract award to June 30. For every year thereafter, the rebates will be made for total payments made to the Vendor for the period starting from July 1 of each year to June 30 of the following year,

Vendor shall track payments made by other Agencies utilizing this Contract via Inter-local Agreement. The City will provide the Vendor with a report showing the City's payments to the Vendor for the appropriate time period. Rebates will be due 30 days from Vendor's receipt of the City's report.

All monies spent between the City and the vendor are part of the rebate calculation, unless the vendor can clearly differentiate a spend category or separate contract that is not associated with the contract. It the Vendor's records conflict with the City's reports, Vendor shall contact the buyer and provide supporting documentation which shall consist of a report showing the 1) City Ordering Department/ Other Public Agency using this contract 2) Invoice Number, 3) Date of Invoice, 4) Dollar Amount "excluding" tax, 5) Any other relevant information. This report should also show all credits and

returns made by the City Departments.

If the rebate is late, the City reserves the right to "hold" all future invoice payments until the rebate has been issued, or to withhold the rebate amount from the next invoice payment due to the vendor.

15. **Pricing**: Pricing reflects the following Terms.. These are in addition to annual Prevailing Wage adjustments if required. The Buyer may exempt these requirements for extraordinary conditions that could not have been known by either party at the time of bid or other circumstances beyond the control of both parties, as determined in the opinion of the Buyer. Such changes (whether increases or decreases) may only be issued by the City Purchasing Buyer (Department of Finance and Administrative Services). No other individual or City Department is authorized to approve such modifications. Changes shall be issued in writing by the City Purchasing Buyer. Absent a written contract document, such changes shall not be considered effective. The Change Order shall not require joint signature, and implies concurrence unless the Contractor rejects in writing immediately upon receipt of such a Change Order.

Requests for Price Decreases: Contractors can offer greater discounts or lower prices at any time when a specific order is placed or when a long-term change in costs allows the Contractor to offer a permanent change to the contract prices. Requests that reduce pricing charged to the City may be delivered to the City Purchasing Buyer at any time during the contract period. Such price reductions should use the same pricing structure as the original contract (i.e. discounts below list, mark-up above, fixed price, or hourly rates). The City may likewise initiate a request to the Contractor for price reductions, subject to mutual agreement of the Contractor.

Requests for Price Increases: Requests that increase costs to the City must be delivered to the City Purchasing Buyer in accordance to the rules below. No other employee may accept a rate increase request on behalf of the City. Any invoice that is sent to the City with pricing above that specified by the City in writing within this Contract or specified within an official written change issued by City Purchasing to this contract, shall be invalid. Payment of an erroneous invoice does not constitute acceptance of the erroneous pricing, and the City would seek reimbursement of the overpayment or would withhold such overpayment from future invoices.

A. **Discount from Manufacturer List Pricing:** The City will not accept requests to change discount rates below Manufacturer List prices or mark-up above wholesale, except for those that are more favorable to the City than the original contract. As manufacturer list prices change, the net price to the City will automatically change in the same percentage as the discount rate to the City.

B. **One-time Purchase Order Prices**: For a one-time purchase, pricing shall be firm and fixed for that purchase, and shall not be subject to requests for price increases by the Contractor. With this said, the Contractor may submit requests to reduce and decrease the price.

C. **Hourly Rates or Service Pricing**: For multi-year contracts that provide services. The Contractor may submit a price reduction that implements a lower and more favorable cost to the City at anytime during the contract. Contractor requests for rate increases must be no sooner than two years after contract signature, are at the discretion of the Buyer; and must be:
   1. The direct result of increases to wage rates and do not exceed the U.S. Dept. of Labor Consumer Price Index (CPI)for All Urban Consumers Seattle-Tacoma-Bremerton or other appropriate service rate index agreed upon between the Buyer and the Contractor. A link to the CPI Data is available at http://data.bls.gov/PDQ/outside.jsp?survey=wp
   2. Calculated over the previous 12-month period.
   3. Not produce a higher profit margin than that on the original contract.
   4. Clearly identify the service titles and the hours of service performed if specified within the contract and the before and after wage rates for such titles.
   5. Be filed with Buyer a minimum of 90 calendar days before the effective date of proposed increase.
   6. Be accompanied by detailed documentation acceptable to the Buyer sufficient to warrant the increase.
   7. The Adjustment (if any) shall remain firm and fixed for at least 365 days after the effective date of the adjustment.
   8. Should not deviate from the original contract pricing scheme/methodology

D. **Fixed Product Pricing:** For contracts that provide on-going, multiple year supply of products, the Contractor may submit notice of a price reduction that provides lower prices to the City, at any time during the contract. Requests by the Contractor to increase pricing shall be no sooner than two years after the execution of the contract, are at the discretion of the Buyer; and must also be:
   1. The direct result of increases at the manufacturer's or supplier's level).
   2. Incurred one (1) year after contract commencement date.
   3. Not produce a higher profit margin than that on the original contract.
   4. Clearly identify the items impacted by the increase.
   5. Be filed with Buyer a minimum of 90 calendar days before the effective date of proposed increase.
   6. Be accompanied by detailed documentation acceptable to the Buyer sufficient to warrant the increase.
   7. The United States published indices such as the The U.S. Dept. Of Labor Consumer Price Index (CPI), Producer Price Index (PPI) or other data may be referenced to help substantiate the Contractor's documentation.

8. The Adjustment (if any) shall remain firm and fixed for at least 365 days after the effective date of the adjustment.
9. Should not deviate from the original contract pricing scheme/methodology.

Seattle will not be bound by prices contained in an invoice that are higher than those in the contract. Unless the higher price has been accepted by the City and the contract amended, the invoice may be rejected and returned to the Vendor for corrections

16. **Catalogue and Manufacturer List Pricing:** Upon City request, the Contractor shall provide access to the "Manufacturer's Current Price List" in electronic and/or paper format. Such requests may be for current catalogue pricing or for past catalogue that are within the term of the contract.

17. **Order Cancellation - Returns and Restocking:** Unless specified otherwise in the Solicitation the following shall apply:

    • Contractor Error: No restocking charge for items ordered due to Contractor error. Contractor pays all shipping costs.

    • Stocked Items: No restocking fee applies if new, unused, in original packaging and shipped back within 30 days of receipt by the City. Customer pays the shipping cost.

    • Non-Stocked Items: Item(s) may be returned if new, unused, in original packaging and shipped back within 30 days of receipt. The Contractor may charge the customer reasonable expenses incurred up until the date of cancellation, expenses that could not be reasonably avoided or offset by the Contractor. In no event will the charge exceed 10%" of the total cost of the order.

    • Non-Standard Items: Items that are custom engineered and fabricated to design specifications may be returned under the terms negotiated between the parties upon request of the City.

    • Failure to perform: If Contractor has presented a particular product as suitable and fit for the purpose described by the City herein or upon order by the City, and the product fails to perform as advised and/or specified, that shall be defined as a Contractor error. No restocking charge shall be charged to the City. Further, if such fitness could not have been determined until the product had been in use, the City may return the product opened and used within 30 days of receipt without penalty or charges due to the City.

18. **Idling Prohibited (Delivery Services):** Vehicles and/or diesel fuel trucks shall not idle at the time and location of the delivery to the City for more than five minutes. The City requires Contractors to utilize practices that reduce fuel consumption and emission discharge, including turning off trucks and vehicles during delivery of products to the City. Exceptions to this requirement include when a vehicle is making deliveries and associated power is necessary; when the engine is used to provide power in another device, and if required for proper warm-up and cool-down of the engine. Specific examples include "bucket" trucks that allow a worker to reach wires on telephone poles or tree branches for trimming; and vehicles with a lift on the back of a truck to move products in and out of the truck. The City of Seattle has a commitment to reduction of unnecessary fuel emissions. The City intends to improve air quality by reducing unnecessary air pollution from idling vehicles. Limiting car and truck idling supports cleaner air, healthier work environments, the efficient use of city resources, the public's enjoyment of City properties and programs, conservation of natural resources, and good stewardship practices.

19. **Travel and Direct Charges:** If the specifications or scope of work for this purchase have specifically identified travel and/or direct costs that the City intends to reimburse, then the following requirements shall apply. All such expenses must be pre-approved in writing by the Project Manager. If the specifications and scope of work do not clearly identify such costs for compensation, than no compensation will be given.

    • City will reimburse the Contractor at actual cost for expenditures that are pre-approved by the City in writing and are necessary and directly applicable to the work required by this Contract provided that similar direct project costs related to the contracts of other clients are consistently accounted for in a like manner. Such direct project costs may not be charged as part of overhead expenses. Direct charges may include, but are not limited to the following items: travel, printing, long distance telephone, supplies, computer charges, and fees of subconsultants or subcontractors.

    • The billing for third party direct expenses specifically identifiable with this project shall be an itemized listing of the charges supported by copies of the original bills, invoices, receipts, subconsultant/subcontractor paid invoices, and other supporting documents used by the Contractor to generate invoice(s) to the City. The original supporting documents shall be available to the City for inspection upon request. All third party charges must be necessary for the services provided under this Contract.

    • The City will reimburse the actual cost for travel expenses incurred as evidenced by copies of receipts (excluding meals) supporting such travel expenses, and in accordance with the City of Seattle Travel Policy, details of which can be provided upon request.

    • **Airfare:** Airfare will be reimbursed at the actual cost of the airline ticket. The City will reimburse for Economy or Coach class fare only. Receipts detailing each airfare are required. Unusual itineraries or multi-leg trips

shall be prorated to the business requirements of this contact at the sole discretion of the City.

- **Meals:** Meals will be reimbursed at the Federal Per Diem daily meal rate *(excluding the "Incidental" portion of the published CONUS Federal M&I Rate)* for the city in which the work is performed (the current Federal Per Diem daily meal rate used by the City for reimbursement will be provided upon request). *Receipts are not required as documentation.* The invoice shall state "the meals are being billed at the Federal Per Diem daily meal rate", and shall detail how many of each meal is being billed (e.g. the number of breakfasts, lunches, and dinners). The City will not reimburse for alcohol at any time.

- **Lodging:** Lodging will be reimbursed at actual cost incurred up to a maximum of the published Runzheimer Cost Index for the city in which the work is performed *(the current maximum allowed reimbursement amount can be provided upon request)*. Receipts detailing each day / night lodging are required. The City will not reimburse for ancillary expenses charged to the room (e.g. movies, laundry, mini bar, refreshment center, fitness center, sundry items, etc.)

- **Vehicle Mileage**: Vehicle mileage will be reimbursed at the Federal Internal Revenue Service Standard Business Mileage Rate in affect at the time the mileage expense is incurred. Documentation of mileage incurred is required. Please note: payment for mileage incurred for long distances traveled shall not be more than an equivalent trip round-trip airfare on a commercial airline for a coach or economy class ticket.

- **Rental Car:** Rental car expenses will be reimbursed at the actual cost of the rental. Rental car receipts are required for all rental car expenses. The City will reimburse for a standard car of a mid-size class or less. The City will not reimburse for ancillary expenses charged to the car rental (e.g. GPS unit).

- **Miscellaneous Travel** (e.g. parking, rental car gas, taxi, shuttle, toll fees, ferry fees, etc.): Miscellaneous travel expenses will be reimbursed at the actual cost incurred. Receipts are required for each expense of $10.00 or more.

- **Miscellaneous other business expenses** Other miscellaneous third party business expenses if allowed by this contract (e.g. printing, photo development, binding, courier, etc): will be reimbursed at the actual cost incurred and may not include a mark up. Receipts are required for all third party miscellaneous expenses that are billed.

- **Subcontractor**: Subcontractor expenses if allowed by this contract will be reimbursed at the actual cost incurred and may not include a mark up. Copies of all subcontractor invoices that are rebilled to the City are required.

20. **Delivery Time:** Except when instructed otherwise, delivery must be made during normal working hours and within timeframes proposed by Contractor herein and as accepted by Seattle. Failure to comply may subject Contractor to non-delivery assessment charges and/or damages as appropriate. Seattle reserves the right to refuse shipment when delivered before or after normal working hours. Contractor shall verify specific working hours of offices and so instruct carrier(s) to deliver accordingly. The acceptance by Seattle of late performance without objection or reservation shall not waive the right of Seattle to claim damages for such breach, nor preclude Seattle from pursuing any other remedy provided herein, including termination, nor constitute a waiver of the requirements for the timely performance of any obligation remaining to be performed by Contractor.

21. **Title, Risk of Loss, Freight, Overages or Underages:** Contractor warrants that he/she has properly produced, stored, packaged, boxed and shipped the products and goods for delivery, at Contractor's expense. No charges will be allowed for handling that includes but is not limited to packing, wrapping, bags, containers, or reels, unless otherwise stated herein. All deliveries are to be made to the applicable delivery location in accordance with Interstate Commerce Commission rules or as indicated in Purchase Order. When applicable, Contractor shall take necessary actions to safeguard items during inclement weather. Title of goods received under this contract shall remain with the Contractor until they are delivered, inspected and accepted at the address specified, at which time title passes to Seattle. Regardless of FOB point, Contractor agrees to bear all risks of loss, injury, or destruction of goods and materials ordered herein which occur prior to delivery, inspection and acceptance by Seattle. Such loss, injury, or destruction shall not release Contractor from any obligations under. Prices include freight prepaid. Contractor assumes the risk of every increase, and receives the benefit of every decrease, in delivery rates and charges. Shipments shall correspond with the Contract; any unauthorized advance or excess shipment is returnable at Contractor's expense.

22. **Identification:** All invoices, packing slips, packages, instruction manuals, correspondence, shipping notices, shipping containers, and other written documents affecting this contract shall be identified by the applicable purchase order number. Packing lists shall be enclosed with each shipment, indicating the contents therein.

23. **Rejection of Goods:** Goods shall not be deemed accepted until he City completes receipt, inspection and acceptance. The City may reject goods upon notice to the Contractor without the requirement to specify the reason(s) for rejection. The City can return non-conforming goods, require Contractor to replace non-conforming goods, or require Contractor to repair non-confirming goods to meet requirements, at the Contractor cost.

24. **Liens:** Contractor warrants all products are free and clear of liens.

25. **Contract Notices:** Contract notices shall be delivered to the Buyer at the addresses specified in the solicitation.

26. **Representations:** Contractor represents and warrants that it has the requisite training, skill and experience necessary to provide Work and is appropriately accredited and licensed by all applicable agencies and governmental entities.

27. **Warranties:** Contractor warrants that all materials, equipment, and/or services provided under this Contract shall be fit for the purpose(s) for which intended, for merchantability, are properly packaged, proper instructions and warnings are supplied, that all goods comply with applicable safety and health standards, that an MSDS Sheet is supplied as required by law, and that products or services conform to the requirements and specifications herein. Acceptance of any service and inspection incidental thereto by Seattle shall not alter or affect the obligations of the Contractor or the rights of Seattle.

28. **Independent Contractor:** It is the intention and understanding of the Parties that Contractor shall be an independent contractor and that Seattle shall be neither liable for nor obligated to pay sick leave, vacation pay or any other benefit of employment, nor to pay any social security or other tax that may arise as an incident of employment. The Contractor shall pay all income and other taxes as due. Industrial or other insurance that is purchased for the benefit of the Contractor shall not be deemed to convert this Contract to an employment contract. It is recognized that Contractor may or will be performing work during the term for other parties and that Seattle is not the exclusive user of the services that Contractor provides.

29. **Inspection:** Work shall be subject, at all times, to inspection by and with approval of Seattle, but the making (or failure or delay in making) such inspection or approval shall not relieve Contractor of responsibility for performance of the Work in accordance with this Contract, notwithstanding Seattle's knowledge of defective or noncomplying performance, its substantiality or the ease of its discovery. Contractor shall provide sufficient, safe, and proper facilities and equipment for such inspection and free access to such facilities.

30. **Performance:** Acceptance by Seattle of unsatisfactory performance with or without objection or reservation shall not waive the right to claim damage for breach, or terminate the contract, nor constitute a waiver of requirements for satisfactory performance of any obligation remaining to be performed by Contractor.

31. **Affirmative Efforts:**
   ▪ Employment Actions: Contractor shall not discriminate against any employee or applicant for employment because of race, religion, creed, age, color, sex, marital status, sexual orientation, gender identity, political ideology, ancestry, national origin, or the presence of any sensory, mental or physical handicap, unless based upon a bona fide occupational qualification. Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their creed, religion, race, age, color, sex, national origin, marital status, political ideology, ancestry, sexual orientation, gender identity, or the presence of any sensory, mental or physical handicap. Such action shall include, but not be limited to employment, upgrading, promotion, demotion, or transfer; recruitment or recruitment advertising, layoff or termination, rates of pay, or other forms of compensation and selection for training.

   ▪ In accordance with Seattle Municipal Code Chapter 20.42, Contractor shall actively solicit the employment and subcontracting of women and minority group members when there are commercially useful purposes for fulfilling the scope of work.

   ▪ In the event Subcontracting is considered appropriate and feasible to contract performance, the Contractor shall develop a Subcontracting Plan, which also may be referred to as an Outreach Plan. The Subcontracting (Outreach) Plan shall specify the Contractor's affirmative efforts and an agreement to the City for subcontracting to women and minority businesses, and/or diverse employment. The Subcontracting (Outreach) Plan, as submitted and/or as agreed upon with the City thereafter, shall be incorporated as a material part of the Contract. In preparing the Subcontracting (Outreach) Plan, Contractors shall actively solicit qualified, available and capable women and minority-owned businesses to perform the subcontracting work for the contract. The Contractor shall submit the Subcontracting (Outreach) Plan to the City with the solicitation and/or prior to contract execution. At the request of the City, Contractor shall promptly furnish evidence of the Contractor's compliance with these requirements, which may include a list of all subcontractors and/or WMBE subcontractors, and may include a request for copies of the executed agreements between the Contractor and subcontractors, invoices and/or performance reports.

   ▪ If upon investigation, the Director of Finance and Administrative Services finds probable cause to believe that the Contractor has failed to comply with the requirements of this Section, the Contractor shall notified in writing. The Director of Finance and Administrative Services shall give Contractor an opportunity to be heard, after ten calendar days' notice. If, after the Contractor's opportunity to be heard, the Director of Finance and Administrative Services still finds probable cause, s/he may suspend the Contract and/or withhold any funds due or to become due to the Contractor, pending compliance by the Contractor with the requirements of this Section.

   ▪ Any violation of the mandatory requirements of this Section, or a violation of Seattle Municipal Code Chapter 14.04 (Fair Employment Practices), Chapter

14.10 (Fair Contracting Practices), Chapter 20.45 (City Contracts – Non-Discrimination in Benefits), or other local, state, or federal non-discrimination laws, shall be a material of contract for which the Contractor may be subject to damages and sanctions provided for by the Contractor Contract and by applicable law. In the event the Contractor is in violation of this Section shall be subject to debarment from City contracting activities in accordance with Seattle Municipal Code Section 20.70 (Debarment).

32. **Assignment:** Contractor shall not assign any of its obligations under this Contract without Seattle's written consent, which may be granted or withheld in Seattle's sole discretion.

33. **Subcontracting:** Contractor shall not subcontract any of its obligations under this Contract without Seattle's written consent, which may be granted or withheld in Seattle's sole discretion. Contractor shall ensure that all subcontractors comply with the obligations, requirements and terms and conditions of the subcontract, except for Equal Benefit provisions. Seattle's consent to subcontract shall not release the Contractor from liability under this Contract, or from any obligation to be performed under this Contract, whether occurring before or after such consent to subcontract.

34. **Key Persons and Subcontractors.** Contractor shall not transfer, reassign or replace any individual or subcontractor that is determined to be essential or that has been agreed upon in the Contractor's Subcontracting (Outreach) Plan, without express written consent of Seattle. If during the term of this Contract, any such individual leaves the Contractor's employment or any named subcontract is terminated for any reason, Contractor shall notify Seattle and seek approval for reassignment or replacement with an alternative individual or subcontractor. Upon Seattle's request, the Contractor shall present to Seattle, one or more subcontractors or individual(s) with greater or equal qualifications as a replacement. Continued achievement of the Subcontracting (Outreach) Plan that was incorporated into this Contract by reference, if any, and the associated subcontract awards, aspirational goals and efforts, will be one of the considerations in approval of such changes. Seattle's approval or disapproval shall not be construed to release the Contractor from its obligations under this Contract.

35. **Involvement of Current and Former City Employees.** If a Contractor has any current or former City employees, official or volunteer, working or assisting on solicitation of City business or on completion of an awarded contract, you **must** provide written notice to City Purchasing of the current or former City official, employee or volunteer's name. The Vendor Questionnaire within your bid documents prompts you to answer that question. You must continue to update

that information to City Purchasing during the full course of the contract. The Vendor is to be aware and familiar with the Ethics Code, and educate vendor workers accordingly.

36. **Equal Benefits.**
   - Compliance with SMC Ch. 20.45: The Contractor shall comply with the requirements of SMC Ch. 20.45 and Equal Benefits Program Rules implementing such requirements, under which the Contractor is obligated to provide the same or equivalent benefits ("equal benefits") to its employees with domestic partners as the Contractor provides to its employees with spouses. At Seattle's request, the Contractor shall provide complete information and verification of the Contractor's compliance with SMC Ch. 20.45. Failure to cooperate with such a request shall constitute a material breach of this Contract. (For further information about SMC Ch. 20.45 and the Equal Benefits Program Rules call (206) 684-0430 or review information at http://cityofseattle.net/contract/equalbenefits/.)

   - Remedies for Violations of SMC Ch. 20.45: Any violation of this section shall be a material breach of Contract for which the City may:
     a. Require the Contractor to pay actual damages for each day that the Contractor is in violation of SMC Ch. 20.45 during the term of the Contract; or
     b. Terminate the Contract; or
     c. Disqualify the Contractor from bidding on or being awarded a City contract for a period of up to five (5) years; or
     d. Impose such other remedies as specifically provided for in SMC Ch. 20.45 and the Equal Benefits Program Rules promulgated there under.

37. **Publicity:** No news release, advertisement, promotional material, tour, or demonstration related to the City's purchase or use of the Contractor's product or any work performed pursuant to this Contract shall be produced, distributed or take place without the prior, specific written approval of the City's Project Director or his/her designee.

38. **Proprietary and Confidential Information:**
The State of Washington's Public Records Act (Release/Disclosure of Public Records) Under Washington State Law (reference RCW Chapter 42.56, the Public Records Act) all materials received or created by the City of Seattle are considered public records. These records include but are not limited to bid or proposal submittals, agreement documents, contract work product, or other bid material.

The State of Washington's Public Records Act requires that public records must be promptly disclosed by the City upon request unless that RCW or another Washington State statute specifically exempts records from disclosure. Exemptions are narrow and explicit and are listed in Washington State Law (Reference RCW 42.56 and RCW 19.108).

As mentioned above, all City of Seattle offices ("the City") are required to promptly make public records available upon request. However, under Washington State Law some records or portions of records may be considered legally *exempt from disclosure*. A list and description of records identified as exempt by the Public Records Act can be found in RCW 42.56 and RCW 19.108.

If the City receives a public disclosure request for any records or parts of records that Contractor has properly and specifically listed on the City Non-Disclosure Request Form (Form) submitted with Contractor's bid/proposal, or records that have been specifically identified in this contract, the City will notify Contractor in writing of the request and will postpone disclosure. While it is not a legal obligation, the City, as a courtesy, will allow Contractor up to ten business days to obtain and serve the City with a court injunction to prevent the City from releasing the records (reference RCW 42.56.540). If you fail to obtain a Court order and serve the City within the ten days, the City may release the documents.

The City will not assert an exemption from disclosure on Contractor's behalf. If Contractor believes that its records are exempt from disclosure, Contractor is obligated to seek an injunction under RCW 42.56.540. Contractor acknowledges that the City will have no obligation or liability to Contractor if the records are disclosed.

39. **Indemnification:** To the extent permitted by law, the Contractor shall protect, defend, indemnify and hold the City harmless from and against all claims, demands, damages, costs, actions and causes of actions, liabilities, fines, penalties, judgments, expenses and attorney fees, resulting from the injury or death of any person or the damage to or destruction of property, or the infringement of any patent, copyright, trademark or trade secret, arising out of the work performed or goods provided under this Contract, or the Contractor's violation of any law, ordinance or regulation, contract provision or term, or condition of regulatory authorization or permit, except for damages resulting from the sole negligence of the City. As to the City of Seattle, the Contractor waives any immunity it may have under RCW Title 51 or any other Worker's Compensation statute. The parties acknowledge that this waiver has been negotiated by them, and that the contract price reflects this negotiation.

40. **Insurance:** Unless specified otherwise, the following is in effect. Contractor shall maintain at its own expense at all times during the term of this Contract the following insurance with limits of liability consistent with those generally carried by similarly situated enterprise:

    1. Minimum Coverages and Limits of Liability. Contractor shall at all times during the term of this Agreement maintain continuously, at its own expense, minimum insurance coverage's and limits of liability as specified below:

        A. Commercial General Liability (CGL) insurance, including:

- Premises/Operations
- Products/Completed Operations
- Personal/Advertising Injury
    - Contractual
    - Independent Contractors
    - Stop Gap/Employers Liability

With minimum limits of liability of $1,000,000 each occurrence combined single limit bodily injury and property damage ("CSL"), except:

    $1,000,000 Personal/Advertising Injury
    $1,000,000 each /disease/employee Stop Gap/Employer's Liability

    B. Automobile Liability insurance, including coverage for owned, non-owned, leased or hired vehicles with a minimum limit of liability of $1,000,000 CSL.

    C. Worker's Compensation for industrial injury to Contractor's employees in accordance with the provisions of Title 51 of the Revised Code of Washington.

2. Seattle as Additional Insured. The City of Seattle shall be included as an additional insured under CGL and Automobile Liability insurance for primary and non-contributory limits of liability.

3. No Limitation of Liability. The limits of insurance coverage specified herein in subparagraph 1A are minimum limits of insurance coverage only and shall not be deemed to limit the liability of Vendor's insurer except as respects the stated limit of liability of each policy. Where required to be an additional insured, the City of Seattle shall be so for the full limits of insurance coverage required by Vendor, whether such limits are primary, excess, contingent or otherwise. Any limitations of insurance liability shall have no effect on Vendor's obligation to indemnify the City.

4. Minimum Security Requirement. All insurers must be rated A- VII or higher in the current A.M. Best's Key Rating Guide and licensed to do business in the State of Washington unless coverage is issued as surplus lines by a Washington Surplus lines broker.

5. Self-Insurance. Any self-insured retention not fronted by an insurer must be disclosed. Any defense costs or claim payments falling within a self-insured retention shall be the responsibility of Contractor.

6. Evidence of Coverage. Prior to performance of any scope of work, Contractor shall provide certification of insurance acceptable to the City evidencing the minimum coverage's and limits of liability and other requirements specified herein. Such certification must include a copy of the policy provision documenting that the City of

Seattle is an additional insured for commercial general liability insurance on a primary and non-contributory basis.

41. **Audit:** Upon request, Contractor shall permit Seattle, and any other governmental agency involved in the funding of the Work ("Agency"), to inspect and audit all pertinent books and records of Contractor, any subcontractor, or any other person or entity that performed work in connection with or related to the Work, at any and all times deemed necessary by Seattle or Agency, including up to six years after the final payment or release of withheld amounts has been made under this Contract. Such inspection and audit shall occur in King County, Washington or other such reasonable location as Seattle or Agency selects. The Contractor shall supply Seattle with, or shall permit Seattle to make, a copy of any books and records and any portion thereof. The Contractor shall ensure that such inspection, audit and copying right of Seattle and Agency is a condition of any subcontract, agreement or other arrangement under which any other person or entity is permitted to perform work under this Contract. *Also see Federal provisions for federal access when this contract is paid in part or in whole by federal fund sources.*

42. **Contractual Relationship:** The relationship of Contractor to Seattle by reason of this Contract shall be that of an independent contractor. This Contract does not authorize Contractor to act as the agent or legal representative of Seattle for any purpose whatsoever. Contractor is not granted any express or implied right or authority to assume or create any obligation or responsibility on behalf of or in the name of Seattle or to bind Seattle in any manner or thing whatsoever.

43. **Supervision and Coordination:** Contractor shall:
    - Competently and efficiently, supervise and direct the implementation and completion of all contract requirements specified herein.
    - Designate in its bid or proposal to Seattle, a representative(s) with the authority to legally commit Contractor's firm. All communications given or received from the Contractor's representative shall be binding on the Contractor.
    - Promote and offer to City of Seattle employees only those materials, equipment and/or services as stated herein and allowed for by contractual requirements. Violation of this condition will be grounds for contract termination.

44. **Compliance with Law:**
    - General Requirement: The Contractor, at its sole cost and expense, shall perform and comply with all applicable laws of the United States and the State of Washington; the Charter, Municipal Code, and ordinances of The City of Seattle; and rules, regulations, orders, and directives of their respective administrative agencies and officers.

    - Licenses and Similar Authorizations: The Contractor, at no expense to the City, shall secure and maintain in full force and effect during the term of this Contract all required licenses, permits, and similar legal authorizations, and comply with all related requirements.

    - Taxes: The Contractor shall pay, before delinquency, all taxes, import duties, levies, and assessments arising from its activities and undertakings under this Contract; taxes levied on its property, equipment and improvements; and taxes on the Contractor's interest in this Contract.

45. **No Gifts or Gratuities:** Contractor shall not directly or indirectly offer anything of value (such as retainers, loans, entertainment, favors, gifts, tickets, trips, favors, bonuses, donations, special discounts, work or meals) to any City employee, volunteer or official, that is intended, or may appear to a reasonable person to be intended, to obtain or give special consideration to the Contractor. Promotional items worth less than $25 may be distributed by the Contractor to City employees if the Contractor uses the items as routine and standard promotions for business. Any violation of this provision may result in termination of this Contract. Nothing in this Contract prohibits donations to campaigns for election to City office, so long as the donation is disclosed as required by the election campaign disclosure laws of the City and of the State.

46. **Contract Workers with 1,000 Hours:** Throughout the life of the Contract, Contractor shall provide written notice to City Purchasing and the City Project Manager of any contract worker that shall perform more than 1,000 hours of contract work for the City within a rolling 12-month period. Such hours include those that the contract worker performs for the Contract, and any other hours that the worker performs for the City under any other contract. Such workers are subject to the requirements of the City Ethics Code, Seattle Municipal Code 4.16. The Contractor shall advise their Contract workers as applicable.

47. **Intellectual Property Rights:**
    Patents: Contractor hereby assigns to Seattle all rights in any invention, improvement, or discovery, together with all related information, including but not limited to, designs, specifications, data, patent rights and findings developed in connection with the performance of Contract or any subcontract hereunder. Notwithstanding the above, the

Contractor does not convey to Seattle, nor does Seattle obtain, any right to any document or material utilized by Contractor that was created or produced separate from this Contract or was preexisting material (not already owned by Seattle), provided that the Contractor has clearly identified in writing such material as preexisting prior to commencement of the Work. To the extent that preexisting materials are incorporated into the Work, the Contractor grants Seattle an irrevocable, non-exclusive, fully paid, royalty-free right and/or license to use, execute, reproduce, display, and transfer the preexisting material, but only as an inseparable part of the Work.

Copyrights: For materials and documents prepared by Contractor in connection with Work, Contractor shall retain the copyright (including the right of reuse) whether or not the Work is completed. Contractor grants to Seattle a non-exclusive, irrevocable, unlimited, royalty-free license to use every document and all other materials prepared by the Contractor for Seattle under this Contract. If requested by Seattle, a copy of all drawing, prints, plans, field notes, reports, documents, files, input materials, output materials, the media upon which they are located (including cards, tapes, discs and other storage facilities), software programs or packages (including source code or codes, object codes, upgrades, revisions, modifications, and any related materials) and/or any other related documents or materials developed solely for and paid for by Seattle in connection with the Work, shall be promptly delivered to Seattle.

Seattle may make and retain copies of such documents for its information and reference in connection with their use on the project. The Contractor does not represent or warrant that such documents are suitable for reuse by Seattle, or others, on extensions of the project, or on any other project. Contractor represents and warrants that it has all necessary legal authority to make the assignments and grant the licenses required by this Section.

48. **No personal liability**: No officer, agent or authorized employee of the City shall be personally responsible for any liability arising under this Contract, whether expressed or implied, nor for any statement or representation made herein or in any connection with this Contract.

49. **Binding Effect**: The provisions, covenants and conditions in this Contract apply to bind the parties, their legal heirs, representatives, successors, and assigns.

50. **Waiver**: No covenant, term or condition or the breach thereof shall be deemed waived, except by written consent of the party against whom the waiver is claimed, and any waiver of the breach of any covenant, term or condition shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other covenant, term or condition. Neither the acceptance by Seattle of any performance by the Contractor after the time the same shall have become due nor payment to the Contractor for any portion of the Work shall constitute a waiver by Seattle of the breach or default of any covenant, term or condition unless otherwise this is expressly agreed to by Seattle, in writing. The City's failure to insist on performance of any of the terms or conditions herein or to exercise any right or privilege or the City's waiver of any breach hereunder shall not thereafter waive any other term, condition, or privilege, whether the same or similar type.

51. **Anti-Trust**: Seattle maintains that, in actual practice, overcharges resulting from antitrust violations are borne by the purchaser. Therefore the Contractor hereby assigns to Seattle any and all claims for such overcharges except overcharges which result from antitrust violations commencing after the price is established under this contract and which are not passed on to Seattle under an escalation clause.

52. **Applicable Law:** This Contract shall be construed under the laws of the State of Washington. The venue for any action relating to this Contract shall be in the Superior Court for King County, State of Washington.

53. **Remedies Cumulative:** Remedies under this Contract are cumulative; the use of one remedy shall not be taken to exclude or waive the right to use another.

54. **Captions:** The titles of sections, or subsections, are for convenience only and do not define or limit the contents.

55. **Severability:** Any invalidity, in whole or in part, of any provision of this Contract shall not affect the validity of any other of its provisions.

56. **Disputes:** Seattle and Contractor shall maintain business continuity to the extent practical while pursuing disputes. Any dispute or misunderstanding that may arise under this Contract concerning Contractor's performance shall first be resolved, if mutually agreed to be appropriate, through negotiations between the Contractor's Project Manager and Seattle's Project Manager, or if mutually agreed, referred to the City's named representative and the Contractor's senior executive(s). Either party may decline or discontinue such discussions and may then pursue other means to resolve such disputes, or may by mutual agreement pursue other dispute alternatives such as alternate dispute resolution processes. Nothing in this dispute process shall in any way mitigate the rights, if any, of either party to terminate the contract in accordance with the termination provisions herein.

Notwithstanding above, if Seattle believes in good faith that some portion of Work has not been completed satisfactorily, Seattle may require Contractor to correct such work prior to Seattle payment. In such event, Seattle must clearly and reasonably provide to Contractor an explanation of the concern and the remedy that Seattle expects. Seattle may withhold from any payment that is otherwise due, an amount that Seattle in good faith finds to be under dispute, or if the Contractor does not provide a sufficient remedy, Seattle may retain the amount equal to the cost to Seattle for otherwise correcting or remedying the work not properly completed.

57. **Termination:**

For Cause: Seattle may terminate this Contract if the Contractor is in material breach of any of its terms , and such breach has not been corrected to Seattle's reasonable satisfaction in a timely manner.

For City's Convenience: Seattle may terminate this Contract in whole or in part, without cause and for any reason including Seattle's convenience, upon written notice to the Contractor.

Nonappropriation of Funds: Seattle may terminate this Contract at any time without notice due to nonappropriation of funds, whether such funds are local, state or federal grants, and no such notice shall be required notwithstanding any notice requirements that may be agreed upon for other causes of termination.

Acts of Insolvency: Seattle may terminate this Contract by written notice to Contractor if the Contractor becomes insolvent, makes a general assignment for the benefit of creditors, suffers or permits the appointment of a receiver for its business or assets, becomes subject to any proceeding under any bankruptcy or insolvency law whether domestic or foreign, or is wound up or liquidated, voluntarily or otherwise.

Termination for Gifts or Gratuities: Seattle may terminate this Contract by written notice to Contractor if Seattle finds that any gratuity in the form of entertainment, a gift, or otherwise, was offered to or given by the Contractor or any agent therefor to any City official, officer or employee, as defined above.

Notice: Seattle is not required to provide advance notice of termination. Notwithstanding, the Buyer may issue a termination notice with an effective date later than the termination notice itself. In such case, the Contractor shall continue to provide products and services as required by the Buyer until the effective date provided in the termination notice.

Actions upon Termination: In the event of termination not the fault of the Contractor, the Contractor shall be paid for the services properly performed prior to termination, together with any reimbursable expenses then due, but in no event shall such compensation exceed the maximum compensation to be paid under the Contract. The Contractor agrees that this payment shall fully and adequately compensate the Contractor and all subcontractors for all profits, costs, expenses, losses, liabilities, damages, taxes, and charges of any kind whatsoever (whether foreseen or unforeseen) attributable to the termination of this Contract. Upon termination for any reason, the Contractor shall provide Seattle with the most current design documents, contract documents, writings and

other product it has completed to the date of termination, along with copies of all project-related correspondence and similar items. Seattle shall have the same rights to use these materials as if termination had not occurred.

58. **Force Majeure – Suspension and Termination:** This section applies in the event that either party is unable to perform the obligations of this contract because of a Force Majeure event as defined herein, to the extent that the Contract obligations must be suspended in full. A Force Majeure event is an event that prohibits performance and is beyond the control of the party. Such events may include natural or man-made disasters, or an action or decree of a superior governmental body, which prevents performance.

Force Majeure under this Section shall only apply in the event that performance is rendered not possible by either party or its agents. Should it be possible to provide partial performance that is acceptable to the City under Section #2 (Emergencies or Dias asters), Section #2 below shall instead be in force.

Should either party suffer from a Force Majeure event and is unable to provide performance, such party shall give notice to the remaining party as soon as practical and shall do everything possible to resume performance.

Upon receipt of such notice, the party shall be excused from such performance as is affected by the Force Majeure Event for the period of such Event. If such Event affects the delivery date or warranty provisions of this Agreement, such date or warranty period shall automatically be extended for a period equal to the duration of such Event.

59. **Major Emergencies or Disasters:** The City may undergo an emergency or disaster that may require the Contractor to either increase or decrease quantities from normal deliveries, or that may disrupt the Contractor's ability to provide normal performance. Such events may include, but are not limited to, a storm, high wind, earthquake, flood, hazardous material release, and transportation mishap, loss of any utility service, fire, terrorist activity or any combination of the above. In such events, the following shall apply.

(a) The City shall notify the Contractor that the City is experiencing an emergency or disaster, and will request emergency and priority services from the Contractor.
(b) The City may request that the Contractor provide either increased or decreased quantities from traditional orders, or may request Contractor provide additional products or services.
(c) Upon such notice by the City, the Contractor shall make reasonable efforts to provide the City the materials in the quantities requested and within the schedule specified by the City, adhering to the conditions in this Section.
(d) The City of Seattle shall be the customer of first priority for the Contractor, except where preceded by State or Federal government mandates. The Contractor shall provide its best and priority efforts to provide the requested goods and/or services to

the City of Seattle in as complete and timely manner as possible. Such efforts by the Contractor are not to be diminished as a result of Contractor providing service to other customers, except as mandated by State or Federal governments.

(e) If the Contractor is unable to respond in the time and/or quantities requested by the City, the Contractor shall promptly assist the City to the extent practicable, to gain access to alternative materials and/or services. This may include:

  a. Coordinating with other distributors or subsidiaries beyond those in the local region to fulfill order requests;

  b. Offering the City substitutions provided the Contractor obtains prior approval from the City for such substitution.

The Contractor shall charge the City the price determined in this Contract for the goods and services provided, and if no price has been determined, it shall charge the City a price that is normally charged for such goods and/or services (such as listed prices for items in stock). However, in the event that the City's request results in the Contractor incurring unavoidable additional costs and causes the Contractor to increase prices in order to obtain a fair rate of return, the Contractor shall charge the City a price not to exceed the cost/profit formula found in this Contract.

60. **Interlocal Cooperation Act:** RCW 39.34 allows cooperative purchasing between public agencies, and other political subdivisions. SMC 20.60.100 also allows non profits to use these agreements. Such agencies that file an Intergovernmental Cooperative Purchasing Agreement with the City of Seattle may purchase from Contracts established by the City. Unless Contractor declines on the Offer submitted by the Seller to the City, the Contractor agrees to sell additional items at the bid prices, terms and conditions, to other eligible governmental agencies that have such agreements with the City. The City of Seattle accepts no responsibility for the payment of the purchase price by other governmental agencies. Should the Contractor require additional pricing for such purchases, the Contractor is to name such additional pricing upon Offer to the City.

61. **City Debarment:** In accordance with SMC Ch. 20.70, the Director of Finance and Administrative Services or designee may debar a Contractor from entering into a Contract with the City or from acting as a subcontractor on any Contract with the City for up to five years after determining that any of the following reasons exist:

1) Contractor has received overall performance evaluations of deficient, inadequate, or substandard performance on three or more City Contracts.

2) Contractor failed to comply with City ordinances or Contract terms, including but not limited to, ordinance or Contract terms relating to small business utilization, discrimination, prevailing wage requirements, equal benefits, or apprentice utilization.

3) Contractor abandoned, surrendered, or failed to complete or to perform work on or in connection with a City Contract.

4) Contractor failed to comply with Contract provisions, including but not limited to quality of workmanship, timeliness of performance, and safety standards.

5) Contractor submitted false or intentionally misleading documents, reports, invoices, or other statements to the City in connection with a Contract.

6) Contractor colluded with another contractor to restrain competition.

7) Contractor committed fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Contract for the City or any other government entity.

8) Contractor failed to cooperate in a City debarment investigation.

9) Contractor failed to comply with SMC 14.04, SMC Ch. 14.10, SMC Ch. 20.42, or SMC Ch. 20.45, or other local, State, or federal non-discrimination laws.

The Director may issue an Order of Debarment after adhering to the procedures specified in SMC 20.70.050. The rights and remedies of the City under these provisions are in addition to any other rights and remedies provided by law or under the Contract.

62. **Recycled Product Requirements:** To promote and encourage environmentally sustainable practices for companies doing business with the City, the City requires that Contractors under City contract use environmentally preferable products in production of City work products.

Green Seal Products: Contractor shall use Green Seal, Eco-Logo or other certified cleaning products if approved by the City, in performance of all cleaning and janitorial work to protect the health, safety, wellness and environmentally sustainable practices that the City requires of companies doing business with the City. Cleaning products, floor care products and other products used in the performance of work that carry a Green Seal certification are required. The Bidder shall identify the products that the Bidder intends to use at the City facilities and shall list them on the Offer Form, with a notation to confirm the Green Seal product certification. The Green Seal website is: http://www.greenseal.org/findaproduct/index.cfm. The City has contracts with various Contractors who will supply the winning Bidder with Green Seal certified products for use in performance of City contract work, at City contract pricing. For the list of Contractors, contact the City Buyer.

Paper and Paper Product Requirements: The City desires use of 100% PCF (post consumer recycled content, chlorine-free) paper, to comply with the City Executive Order and to encourage environmentally preferable practices for

City business. Such paper is available at City contract prices from Keeney's Office Supplies at 425-285-0541.

The City prohibits vinyl binders. The City prefers 100% recycled stock Binders. "Rebinders" are a product that fit this requirement and are available at City contract prices from Complete Office at 206-628-0059 or Keeney's Office Supplies at 425-285-0541. Please do not use binders or plastic folders, unless essential. Note - Keeney's is a Women Owned Firm and may be noted on your Outreach Plan.

Contractors shall duplex materials prepared for Seattle under this Contract, whether materials are printed or copied, except when impracticable due to the nature of the product. This is executed under the Mayor's Executive Order, issued February 13, 2005.

63. **Workers Right to Know**: "Right to Know" legislation required the Department of Labor and Industries to establish a program to make employers and employees more aware of the hazardous substances in their work environment. WAC 296-800-108 requires among other things that all manufacturers/distributors of hazardous substances, including any of the items listed on this ITB, RFP or contract bid and subsequent award, must include with each delivery completed Material Safety Data Sheets (MSDS) for each hazardous material. Additionally, each container of hazardous material must be appropriately labeled with: the identity of the hazardous material, appropriate hazardous warnings, and the Name and Address of the chemical manufacturer, importer, or other responsible party. Labor and Industries may levy appropriate fines against employers for noncompliance and agencies may withhold payment pending receipt of a legible copy of the MSDS. OSHA Form 20 is not acceptable in lieu of this requirement unless it is modified to include appropriate information relative to "carcinogenic ingredients: and "routes of entry" of the product(s) in question.

64. **Davis Bacon Act.**
If this work has federal funding, work in this contract is subject to prevailing wage requirements for both the State (RCW Chapter 39.12) and federal (Davis-Bacon and related acts), if such work has an applicable wage category. The Contractor and all subs must then comply with the Davis-Bacon Act (includes (40 U.S.C. 276a to a-7) and related Acts (Walsh-Healy Public Contracts Act for manufacturer, and the McNamara-O'Hara Service Contract Act for services), as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction").

65. The Contractor and every Subcontractor must then pay the greater of the State prevailing wage rates and the federal prevailing wage rates as issued by the Secretary of Labor, on a classification by classification basis. Contractors shall be required to pay wages not less than once a week. The Contractor shall report all suspected or reported violations to the City. http://www.gpo.gov/davisbacon/wa.html

66. **Prevailing Wage Requirements.**

a. If this contract is subject to prevailing wages, as required by RCW 39.12 (Prevailing Wages on Public Works) and RCW 49.28 (Hours of Labor) as amended or supplemented, Contractor shall be responsible for compliance by the Contractor and all subcontractors with all provisions herein.

b. Filing Your Intent: The awarded Contractor and all subcontractors shall file an Intent to Pay Prevailing Wage Form concurrent with the execution of the contract.
  - To do so, the Contractor and any of their subcontractors will require a Contract Number and Start Date. The Buyer will tell you the Contract Number; the start date is the date your contract is signed.
  - The Contractor shall then promptly submit the Intent to the Department of Labor & Industries (L&I) for approval.
  - The Contractor also shall require any subcontractor to also file an Intent with L&I.
  - This must be done online at the L&I website: http://www.lni.wa.gov/TradesLicensing/PrevWage/default.asp.
  - If unable to file on-line, a paper copy of the approved Intent shall instead be promptly provided to the Buyer.
  - The Contractor shall notify the Buyer of the Intents that are filed by both the Contractor and all subs,

c. Contractor and any subcontractor shall not pay any laborer, worker or mechanic less than the prevailing hourly wage rates that were in effect at the time of bid opening for the worker classifications that are provided for under Prevailing Wages as issued by the State of Washington for the County in which the work shall be performed.

d. Vocationally handicapped workers, i.e. those individuals whose earning capacity is impaired by physical or mental deficiency or injury, may be employed at wages lower than the established prevailing wage. The Fair Labor Standards Act requires that wages based on individual productivity be paid to handicapped workers employed under certificates issued by the Secretary of Labor. These certificates are acceptable to the Department of Labor and Industries. Sheltered workshops for the handicapped may submit a request to the Department of Labor and Industries for a special certificate, which would, if approved, entitle them to pay their employees at wages, lower than the established prevailing wage.

e. In certain situations, an Intent to Pay Prevailing wages shall be filed with the L&I and the Buyer, but the Contractor may indicate an exception on the Intent form that exempts the prevailing wages rates for the following:

- Sole owners and their spouse.
- Any partner who owns at least 30% of a partnership.
- The president, vice-president, and treasurer of a corporation if each one owns at least 30% of the corporation.
- Workers regularly employed on monthly or per diem salary by state or any political subdivision created by its laws.

f. Prevailing Wage rates in effect at the time of bid opening remain in effect for the duration of this contract, except for annual adjustments required by this agreement for multi-year contracts (where contract is longer than one year) and for building service maintenance (janitorial, waxers, shampooers, and window cleaners).

g. It is the sole responsibility of the Contractor to assign the appropriate classification and associate wage rates to all laborers, workers or mechanics that perform any work under this contract, in conformance with the scope of work descriptions of the Industrial Statistician of the Washington State Department of Labor and Industries.

h. With each invoice, Contractor will attach or write a statement that wages paid were compliant to applicable Prevailing Wage rates, including the Contractor and any subcontractors.

i. Upon contract completion, Contractor shall file the Affidavit of Wages Paid (form L700-007-000) approved by the Industrial Statistician of Washington L&I. This may be performed on-line if the Contractor has initiated the original Intent to Pay Prevailing Wage process on line. The receipt of the approved affidavit is required before Seattle can pay the final invoice. The City may withhold payment on any invoice due the Contractor until the approved affidavit is received.

j. The Contractor shall also ensure that each Subcontractor likewise files an Affidavit.

k. The Contractor shall notify the Buyer and provide a copy of the Affidavit(s).

l. For jobs above $10,000, Contractor is required to post for employees' inspection, the Intent form including the list of the labor classifications and wages used on the project. This may be postured in the nearest local office, for road construction, sewer line, pipeline, transmission line, street or alley improvement projects as long as the employer provides a copy of the Intent form to the employee upon request.

m. In the event any dispute arises as to what the prevailing wages are for this Contract, and the dispute cannot be solved by the parties involved, the matter shall be referred to the Director of the Department of Labor and Industries of the State of Washington. In such case, the Director's decision shall be final, conclusive and binding on all parties. If the dispute involves a federal prevailing wage rate, the matter shall be referred to the U.S. Secretary of Labor for a decision. In such case, the Secretary's decision shall be final, conclusive and binding on all parties.

Prevailing Wage rate changes for Service Contracts greater than one year in duration:

a. This provision only applies to service contracts that continue beyond a single year in duration, including building service maintenance contracts (janitorial service contractors and work performed by janitors, waxers, shampooers, and window cleaners) and to multi-year service contracts.

b. Contractor and any subcontractor must pay at least the prevailing wage rates that were in effect at time of bid throughout the duration of the contract.

c. Each contract anniversary thereafter, Contractor and any subcontractors shall review the then current Prevailing Wage Rates. The Contractor shall increase wages paid if required to meet no less then the current wage rates in effect at the time of the contract anniversary.

d. Any price or rate increases made as a result of a change in the prevailing wages will be compensated by the City on a pass through basis if the Contract requests a price increase in accordance with the price increase request requirements provided elsewhere in this contract. The Contractor must follow the contract instructions for pricing increases, notifying the Buyer at least 45 days prior to the contract anniversary date of any resulting price increase and documenting the increase.

66. **Background Checks and Immigrant Status**
The City has strict policies regarding the use of Background checks, criminal checks and immigrant status for contract workers. The policies are incorporated into the contract and available for viewing on-line at http://www.seattle.gov/business/WithSeattle.htm

Federal Provisions

67. **Equal Employment Opportunity:** All Contractors must comply with federal Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.:

67. **Civil Rights Act Title VI:** The Contractor must comply with

the provisions of the Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.). The law provides that no person in the United States shall, on the grounds of race, color or national origin, be denied the benefits of, be excluded from participation in, or be subjected to, discrimination under any program or activity receiving federal financial assistance.

67. **Audit:** Seattle, the Federal grant agency if any, the Comptroller General of the United States, or any of their duly authorized representatives shall be provided access to any books, documents, papers and records of the subcontractor or any subcontract which are directly pertinent to this specific contract for the purpose of making audit, examination, excerpts and transcriptions. FAR clause 52.215-2 incorporated by reference. The complete clause may be viewed at http://www.whitehouse.gov/omb/circulars/a110/ The OMB A-110 provisions in effect at the time of this order govern. FAR clauses may be viewed at http:www.arnet.gov/far/

68. **Americans with Disabilities Act:** The Contractor shall comply with all applicable provisions of the Americans with Disabilities Act of 1990 (ADA) in performing its obligations under this Contract. In particular, if the Contractor is providing services, programs, or activities to City employees or members of the public as part of this Contract, the Contractor shall not deny participation or the benefits of such services, programs, or activities to people with disabilities on the basis of such disability. Failure to comply with the provisions of the ADA shall be a material breach of, and grounds for the immediate termination of, this Contract.

69. **OSHA/WISHA:** Contractor agrees to comply with conditions of the Federal Occupational Safety and Health Acts of 1970 (OSHA), as may be amended, and, if it has a workplace within the State of Washington, the Washington Industrial Safety and Health Act of 1973 (WISHA), as may be amended, and the standards and regulations issued thereunder and certifies that all items furnished and purchased under this order will conform to and comply with said standards and regulations. Contractor further agrees to indemnify and hold harmless purchaser from all damages assessed against purchaser as a result of Contractor's failure to comply with the acts and standards thereunder and for the failure of the items furnished under this order to so comply.

70. **Contract Work Hours and Safety Standards:** For all contracts that employ mechanics or laborers, the Contractor and all subs shall comply with Sections 102 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provide that the worker is compensated

at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

71. **Beck Notice:** Notification of Employee Rights Concerning Payment of Union Dues or Fees (Executive Order 13201) shall apply to all contracts above $100,000.

72. **Clean Air Act and Federal Water Pollution Control Act:** All Contractors and subcontractors shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the City immediately and to the Regional Office of the Environmental Protection Agency (EPA).

73. **Energy Efficiency:** All contractors and subcontractors must comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

74. **Federal Amendments:** Federal agencies are permitted to require changes, remedies, changed conditions, access and records retention, suspension of work, and other clauses approved by the Office of Federal Procurement Policy, per OMB Circular A-102 Common Rule, Section 36.

75. **Federal Debarment for Primes and all Subcontractors:** By signing this agreement, the Contractor certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Contractor shall immediately notify the City of any suspension or debarment or other action that excludes the Contractor and any subcontractor level from participation in Federal contracting. Prior to performance of any work by the Contractor or any subcontractor under this contract, Contractor shall verify all subcontractors that are intended and/or used by the Contractor for performance of City work are in good standing and are not debarred, suspended or otherwise ineligible by the Federal Government. Contractor shall include this same provision in any subcontractor or lower contract agreements. Debarment shall be verified at https://www.sam.gov/portal/public/SAM/#1 . The Contractor shall keep documentation of such verification within the Contractor records.

76. **Copeland Anti-Kickback Act):** All contractors and subcontractors for construction or repair shall comply with the Copeland "Anti-Kickback" Action (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR, part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subcontractor is prohibited from inducing, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which s/he is otherwise entitled. The Contractor shall immediately notify the City of any suspected or reported violations.

77. **Byrd Anti-Lobbying Amendment:** Contractors executing contracts with the City shall sign the Contractor Questionnaire, providing certification of compliance to the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 13652. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the City.

STATE OF WASHINGTON
OFFICE OF THE SECRETARY OF STATE
DIVISION OF ARCHIVES & RECORDS MANAGEMENT
LOCAL RECORDS COMMITTEE
PER RCW 40.14

PUBLIC RECORDS RETENTION SCHEDULE & DESTRUCTION AUTHORIZATION

1. AGENCY TITLE City of Seattle	2. DEPARTMENT/DIVISION TITLE Seattle Department of Transportation (SDOT)	3. OFFICE/SECTION TITLE Traffic Management (19.04.00)	4. DATE SUBMITTED June 24, 2002

5. ADDRESS (PO Box or Street, City, and Zip Code) 600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	6a. RECORDS MANAGER NAME (TYPE OR PRINT) Jennifer Winkler
	6b. RECORDS MANAGER TELEPHONE (206) 684-8154 6c. RECORDS MANAGER E-MAIL Jennifer.winkler@seattle.gov

7. RECORDS MANAGER SIGNATURE (Required)
I hereby certify that I have prepared this schedule in compliance with current federal, state, and local regulations, and I ensure it's accuracy.

SIGNATURE __Jennifer Winkler_____

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	TRAFFIC MANAGEMENT MAIN							
1.	**Traffic Management Location History Files** Files document the history of traffic management issues, problems and solutions on City of Seattle owned and maintained streets and intersections. May include citizen complaints, responses and supporting documentation, claims, traffic control requests, documentation of traffic incidents specifically for that street, correspondence, etc. Files are maintained by street name or number.	OFM			End of Calendar Year	10 Years	05-02-0293	
2.	**Traffic Management Issue Files** Files document traffic management related issues regarding one specific topic (pedestrians, channelization lines, etc.) or areas where issues relate to a several block radius (Pike Place Market, Westlake Center, etc). May include citizen complaints and responses, traffic control requests, newsclippings and additional reference material on traffic management related issues, etc.	OFM			End of Calendar Year	10 Years	05-02-0294	Potentially Archival

AGENCY MANAGER SIGNATURE: Robert Miller	AGENCY ARCHIVIST SIGNATURE: Scott Cline

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Initials of Records Management Section Analyst: __SAA_____

LOCAL RECORDS COMMITTEE ACTION: ☑ Approved as Submitted-DATE: __09/30/2004_____ ☐ Approved as Amended-DATE: _____ ☐ Returned Unprocessed-DATE: _____

See original for signature _____ For the Attorney General	See original for signature _____ For the State Auditor	See original for signature _____ For the State Archivist

	STATE OF WASHINGTON OFFICE OF THE SECRETARY OF STATE DIVISION OF ARCHIVES & RECORDS MANAGEMENT LOCAL RECORDS COMMITTEE PER RCW 40.14	**PUBLIC RECORDS RETENTION SCHEDULE & DESTRUCTION AUTHORIZATION**	*OSOSF-002 (Formerly SSA-24)* Page 2 of 17

1. AGENCY TITLE City of Seattle	**2. DEPARTMENT/DIVISION TITLE** Seattle Department of Transportation (SDOT)	**3. OFFICE/SECTION TITLE** Traffic Management (19.04.00)	**4. DATE SUBMITTED** June 24, 2002

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3.	**Daily Maintenance Activity Records/Crew Reports** Used to document actual work performed. May include number of labor hours, date, time and location of each job, materials and/or equipment used, task numbers for charge back or other project tracking purposes and management cost codes.	OFM			End of Calendar Year	6 Years	GS50-04B-29	Records located in the following divisions: Signal Shop, Signs and Markings Maintenance
4.	**Traffic Management Work Instructions** Documents a variety of traffic control maintenance requests including installation, inspection, testing, repair or replacement of non-electrical traffic control signs, markings, parking meters, etc. Work instructions may be generated from public complaints or from other local government agencies. Includes work location, name of person requesting service, problem statement, inspection summary and maintenance recommendations.	OFM			Project Completion	10 Years	GS50-18-24	Records located in the following divisions: Parking Meter Maintenance and Sign Records
	SIGNAL OPERATIONS							
5.	**Functional Test Logs** Files are used to document routine testing and maintenance activities of traffic signals. Includes date, time and location of signal being tested.	OFM			End of Calendar Year	3 Years	GS50-18-41	

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| | STATE OF WASHINGTON
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LOCAL RECORDS COMMITTEE
PER RCW 40.14 | **PUBLIC RECORDS RETENTION SCHEDULE &
DESTRUCTION AUTHORIZATION** | *OSOSF-002 (Formerly SSA-24)*

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| 1. AGENCY TITLE
City of Seattle | 2. DEPARTMENT/DIVISION TITLE
Seattle Department of Transportation (SDOT) | 3. OFFICE/SECTION TITLE
Traffic Management (19.04.00) | 4. DATE SUBMITTED
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6.	**Intersection Registers** Documents city crew visits to signal box sites. Registers include employee name, date, time and purpose of the visit. Used to document and track signal maintenance. Registers are located in the signal box.	OFM			Life of Equipment	3 Years	GS50-18-39	
7.	**Signal History Cards** Cards contain documentation of current equipment in signal boxes and of equipment replacements. Used for maintenance and repair purposes.	OFM			Life of Equipment	3 Years	GS50-18-41	
8.	**Signal Inventory** Files document the location of all city-operated traffic signals. Indicates location, type of equipment, installation date and similar information.	OFM			Upon Revision	1 Year	GS50-18-35	

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OSOSF-002 (Formerly SSA-24)

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9.	**Signal Studies (Unwarranted Installations)** Files contain documentation of signal projects that do not meet warrant requirements. May include citizen requests, petitions, drawings and diagrams, traffic studies, volume counts, sketches and warrant determinations.	OFM			Completion of Study	10 Years	GS50-18-10	
10.	**Signal Studies (Warranted Installations)** Records used to determine if installation of a traffic signal at a particular location is warranted. May include citizen requests, drawings and diagrams, petitions, traffic studies, volume counts, sketches and warrant determinations.	OPR			<u>Signal installed</u>: life of signal <u>Not installed</u>: completion of study	10 Years	GS50-18-10	
11.	**Signalized Intersection History Files** Files document the installation, maintenance history and removal of all signalized traffic control devices including crosswalk signals and traffic lights. May include intersection diagrams, work instructions, copies of timing plans, dial cards, traffic signal investigation requests and citizen complaints. Records are used to support claims and schedule preventative maintenance.	OFM			Removal of Signal	10 Years	GS50-18-39	

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12.	**Traffic Signal Timing Plans** Records consist of timing plans for traffic signals. May include plans for timing changes due to special events, optimization projects and new installations. Information includes signal location, date, time and name of person making timing adjustments. Used to document compliance with safety guidelines and to develop maintenance schedules.	OFM			Upon Revision	10 Years	GS50-18-41	
	TRAFFIC CONTROL - BICYCLE & PEDESTRIAN PROGRAM							
13.	**Bicycle & Pedestrian Safety Project Files (Approved)** Files are used to document the approval, construction and removal of pedestrian, bicyclist and school zone safety projects including curb ramps, crossing signs, crosswalks, curb bulbs, bike racks, etc. May include citizen requests, traffic control request forms, traffic and pedestrian count reports and copies of accident reports, community meeting agendas and minutes, construction requests and reports, plans and designs, field notes and photographs.	OPR			Removal of Device	10 Years	GS50-18-27	

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14.	**Bicycle & Pedestrian Safety Project Files (Unapproved)** Files contain documentation of projects not selected for construction or implementation. May include citizen requests, traffic control requests, traffic count and accident reports and decision letters and memoranda.	OFM			Project Determination Made	10 Years	GS50-18-27	
15.	**Crosswalk Inventory** Files document location of all crosswalks maintained by the City. Includes crosswalk location, date of installation and similar data. Used to develop maintenance schedules and write work instructions.	OFM			Upon Revision	1 Year	05-02-0295	
16.	**School Walking Route Maps** Files contain annual updates and revisions to school-walking route maps created for the City's public elementary schools. Updated information is provided to Seattle Public Utilities (SPU) for maintenance of the GIS data set that is used to provide mapping services to the public.	OFM			Upon Revision	1 Year	GS50-01-32	

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City of Seattle	Seattle Department of Transportation (SDOT)	Traffic Management (19.04.00)	December 4, 2007

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	TRAFFIC CONTROL - CARPOOL PROGRAM							
17.	**Carpool Certification Lists** Listing of qualified carpool applicants participating in programs established through legal agreements with private building owners and property managers. Commuter Services administers the application process and provides lists of certified carpoolers to private building contacts who collect fees and issue permits. Certification listings are updated quarterly and organized by building name. (Revision of 12/2007 reduces retention from 3 years)	OFM			End of Quarter	1 Years	GS50-01-02	
18.	**Carpool Program Permit Files** Files document the selection and administration process of the carpool parking permit program. Files consist of permit applications and related correspondence. Records filed by carpool area then permit number. Permits are renewed quarterly.	OFM			End of Quarter	3 Years	GS59-01-02	

AGENCY MANAGER SIGNATURE:	AGENCY ARCHIVIST SIGNATURE:

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☐ No approval by Local Records Committee necessary; State Archives review of schedules verifies all series meet requirements of Local Government General Records Retention Schedules. Signature of State Archives representative: _____

STATE OF WASHINGTON
OFFICE OF THE SECRETARY OF STATE
DIVISION OF ARCHIVES & RECORDS MANAGEMENT
LOCAL RECORDS COMMITTEE
PER RCW 40.14

PUBLIC RECORDS RETENTION SCHEDULE & DESTRUCTION AUTHORIZATION

OSOSF-002 (Formerly SSA-24)

Page 8 of 17

1. AGENCY TITLE	2. DEPARTMENT/DIVISION TITLE	3. OFFICE/SECTION TITLE	4. DATE SUBMITTED
City of Seattle	Seattle Department of Transportation (SDOT)	Traffic Management (19.04.00)	December 4, 2007

5. ADDRESS (PO Box or Street, City, and Zip Code)	6a. RECORDS MANAGER NAME (TYPE OR PRINT)
600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	Jennifer Winkler

6b. RECORDS MANAGER TELEPHONE	6c. RECORDS MANAGER E-MAIL
(206) 684-8154	Jennifer.winkler@seattle.gov

7. RECORDS MANAGER SIGNATURE (Required)
I hereby certify that I have prepared this schedule in compliance with current federal, state, and local regulations, and I ensure it's accuracy.

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19.	**Permit Tracking Database** Access database used to log in requests for carpool permits and track permit issuance process. Data is obtained from Carpool Program Permit Files and includes name of permit applicants, date of application, location of carpool area and date permit was issued. (Revision of 12/2007 changes cut-off from System Replacement and reduces retention from 3 years).	OFM			Termination of Permit	1 Year	GS50-01-02	
	TRAFFIC CONTROL - CONSTRUCTION, DETOURS, SPECIAL EVENTS							
20.	**Special Event Traffic Control Plans** Files contain traffic control plans developed for Special Event Permits (i.e., film crews, races, parades). Includes diagram of location or route, detour plan, event date, time and description.	OFM	Parks & Recreation: parades & races OED: films		Plan Completion	3 Years	GS50-01-02	

AGENCY MANAGER SIGNATURE: AGENCY ARCHIVIST SIGNATURE:

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	STATE OF WASHINGTON OFFICE OF THE SECRETARY OF STATE DIVISION OF ARCHIVES & RECORDS MANAGEMENT LOCAL RECORDS COMMITTEE PER RCW 40.14	**PUBLIC RECORDS RETENTION SCHEDULE & DESTRUCTION AUTHORIZATION**	*OSOSF-002 (Formerly SSA-24)* Page 9 of 17

1. AGENCY TITLE City of Seattle	**2. DEPARTMENT/DIVISION TITLE** Seattle Department of Transportation (SDOT)	**3. OFFICE/SECTION TITLE** Traffic Management (19.04.00)	**4. DATE SUBMITTED** June 24, 2002

5. ADDRESS (PO Box or Street, City, and Zip Code) 600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	**6a. RECORDS MANAGER NAME (TYPE OR PRINT)** Jennifer Winkler	
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21.	**Temporary Traffic Control Files** Files document the use of temporary traffic and parking controls (i.e. detours, traffic cones, street markings) to manage the flow of traffic during construction projects and City maintenance projects. Files may include channelization sketches, work instructions, diagrams and comments.	OPR			Project Completion	6 Years	GS50-01-39	
22.	**Traffic Management Plans** Files document development and implementation of traffic management plans required under the land use code. May include Memorandum of Agreements (MOAs) between the City and private buildings and/or sporting venues, correspondence, traffic count and pedestrian studies, traffic re-routing plans, carpool compliance reports, surveys and copies of Master Use Permits.	OPR			Expiration of Agreement or Permit	6 Years	GS50-11-05(s)	Potentially Archival
23.	**Traffic Specification Standards** Files document the development of specifications for street and/or lane closures related to construction projects and street maintenance. May include channelization diagrams, traffic count reports and guidelines documenting the approved times for lane closures, required channelization markings, correspondence and supporting documentation.	OPR			Upon Revision	6 Years	GS50-01-32	

AGENCY MANAGER SIGNATURE: Robert Miller	AGENCY ARCHIVIST SIGNATURE: Scott Cline

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LOCAL RECORDS COMMITTEE ACTION: ☐ Approved as Submitted-DATE: _____ ☑ Approved as Amended-DATE: _02/25/2005_____ ☐ Returned Unprocessed-DATE: _____

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For the Attorney General	For the State Auditor	For the State Archivist

STATE OF WASHINGTON **OFFICE OF THE SECRETARY OF STATE** **DIVISION OF ARCHIVES & RECORDS MANAGEMENT** **LOCAL RECORDS COMMITTEE** **PER RCW 40.14**	**PUBLIC RECORDS RETENTION SCHEDULE &** **DESTRUCTION AUTHORIZATION**

OSOSF-002 (Formerly SSA-24)

1. AGENCY TITLE City of Seattle	**2. DEPARTMENT/DIVISION TITLE** Seattle Department of Transportation (SDOT)	**3. OFFICE/SECTION TITLE** Traffic Management (19.04.00)	**4. DATE SUBMITTED** June 24, 2002

5. ADDRESS (PO Box or Street, City, and Zip Code) 600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	**6a. RECORDS MANAGER NAME (TYPE OR PRINT)** Jennifer Winkler
	6b. RECORDS MANAGER TELEPHONE (206) 684-8154 / **6c. RECORDS MANAGER E-MAIL** Jennifer.winkler@seattle.gov

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	TRAFFIC CONTROL - CURB SPACE MANAGEMENT							
24.	**Bus Stop Change Files** Files document issues related to temporary changes to Metro Transit bus stops due to construction issues or permanent location changes prompted from a citizen's request. May include safety inspection report, field notes, correspondence, citizen complaints, work instructions and recommendations for relocations.	OFM			Project Completion	6 Years	GS50-01-39	
25.	**Parking Device Inventory** Files document location of all current parking meters, signs and other parking control devices. Includes information on location, type of equipment, date of installation and similar device data. Used to develop maintenance schedules and write work instructions.	OFM			Upon Revision	1 Year	GS50-18-35	

AGENCY MANAGER SIGNATURE: Robert Miller | **AGENCY ARCHIVIST SIGNATURE:** Scott Cline

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PUBLIC RECORDS RETENTION SCHEDULE & DESTRUCTION AUTHORIZATION

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1. AGENCY TITLE	2. DEPARTMENT/DIVISION TITLE	3. OFFICE/SECTION TITLE	4. DATE SUBMITTED
City of Seattle	Seattle Department of Transportation (SDOT)	Traffic Management (19.04.00)	June 24, 2002

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600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	Jennifer Winkler	
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26.	**Residential Parking Zone Establishment Files (Approved)** Files document the process of selecting and establishing neighborhood residential parking zones. May include citizen petitions, correspondence, field check notes, parking usage reports, community meeting materials, review notes from design committee and work requests.	OPR			Zone Establishment	10 Years	04-10-0288	Potentially Archival
27.	**Residential Parking Zone Establishment Files (Unapproved)** Files contain documentation of unapproved applications for establishment of neighborhood residential parking zones. May include citizen petitions, correspondence, field check notes, parking usage reports, community meeting materials, review notes from design committee and work requests.	OFM			Project Determination Made	3 Years	04-10-0289	

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For the State Auditor

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| **1. AGENCY TITLE**
City of Seattle | **2. DEPARTMENT/DIVISION TITLE**
Seattle Department of Transportation (SDOT) | **3. OFFICE/SECTION TITLE**
Traffic Management (19.04.00) | **4. DATE SUBMITTED**
June 24, 2002 |

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600 4th Ave., Fl. 3
P.O. Box 94728
Seattle, Wa. 98124-4728 | **6a. RECORDS MANAGER NAME (TYPE OR PRINT)**
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	TRAFFIC CONTROL - PARKING METER MAINTENANCE							
28.	**Parking Meter Hood Sheets** Files document requests for installation, replacement or removal of Parking Meter Hoods. They include meter location, name of person requesting service, date and time of installation and removal.	OPR			End of Calendar Year	6 Years	GS55-05H-05	
29.	**Parking Meter Maintenance Cards** Cards show the type and frequency of repairs for each parking meter. The cards are used for preventive maintenance and to verify parking ticket complaints and claim investigations. They include meter location, date and time of installation and type of repair.	OFM			End of Calendar Year	6 Years	GS55-05H-05	

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OSOSF-002 (Formerly SSA-24)

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1. AGENCY TITLE	2. DEPARTMENT/DIVISION TITLE	3. OFFICE/SECTION TITLE	4. DATE SUBMITTED
City of Seattle	Seattle Department of Transportation (SDOT)	Traffic Management (19.04.00)	June 24, 2002

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	TRAFFIC CONTROL - PERMITS & ENFORCEMENT							
30.	**Parking Citations** Documents the issuance of a citation and a fine for violating parking regulations in commercial load zones. Files contain photos, citations that include citation number, auto license number and state, type of parking violation, date, time and location of violation and supporting documentation. Contested citations are pulled from these files and transferred to the Municipal Court.	OFM			End of Calendar Year	3 Years	L07-01-06	
31.	**Traffic Permits** Files document the issuance of annual, short-term and temporary permits for special parking, parking meter hoods, over-legal vehicles, building moves, etc. May include permit applications, copies of permits, vehicle registration information and proof of residency.	OFM			Permit Expiration	3 Years	GS50-12D-10	

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	TRAFFIC MANAGEMENT - COLLISION RECORDS							
32.	**Traffic Collision Database** Database system (Hansen) tracks information contained on collision reports such as participant name, collision date, location and diagram codes. Database is used to determine improvements to traffic conditions, evaluate collision trends and plan safety projects. Also serves as a finding aid to Traffic Collision Files.	OFM			End of Calendar Year	6 Years	05-02-0296	
33.	**Traffic Collision Files** Files consist of copies of collision reports provided by the Seattle Police Department, Washington State Patrol, University of Washington and private citizens. Files are used to evaluate fatalities, identify potential damage to City property, plan and evaluate traffic safety projects and support claim investigations.	OFM	WA State Patrol		End of Calendar Year	6 Years	GS50-18-32	
34.	**Traffic Collision Summary Reports** Various reports, including mandated annual report (SMC 11.16.220), containing information on traffic conditions, traffic collisions, number of persons killed and injured and other traffic collision data and traffic trends throughout the City. Files are used to identify and evaluate traffic hazards, monitor and evaluate safety improvements and programs, apply for safety grants, respond to citizen concerns and support investigations.	OPR			End of Calendar Year	10 Years	04-10-0291	Potentially Archival

AGENCY MANAGER SIGNATURE: Robert Miller	AGENCY ARCHIVIST SIGNATURE: Scott Cline

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1. AGENCY TITLE	2. DEPARTMENT/DIVISION TITLE	3. OFFICE/SECTION TITLE	4. DATE SUBMITTED
City of Seattle	Seattle Department of Transportation (SDOT)	Traffic Management (19.04.00)	June 24, 2002

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600 4th Ave., Fl. 3 P.O. Box 94728 Seattle, Wa. 98124-4728	Jennifer Winkler	
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	TRAFFIC OPERATIONS - CHANNELIZATION							
35.	**Channelization Device Inventory** Inventory listing of channelization devices throughout the City includes location and maintenance history information for crosswalks, neighborhood traffic circles, roadway markings, etc. Used to prepare maintenance schedules and write work instructions.	OFM			Upon Revision	1 Year	05-02-0297	
36.	**Channelization Layout Drawings** Files document the design and location of channelization devices on arterial streets including roadway markings, pavement buttons and signs related to traffic control. Filed by intersection and/or road name. Used to replace markings and develop street maintenance schedule.	OFM			Upon Revision	6 Years	04-10-0292	

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OSOSF-002 (Formerly SSA-24)

Page 16 of 17

1. AGENCY TITLE City of Seattle	2. DEPARTMENT/DIVISION TITLE Seattle Department of Transportation (SDOT)	3. OFFICE/SECTION TITLE Traffic Management (19.04.00)	4. DATE SUBMITTED June 24, 2002

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37.	**Channelization History Files** Chronological history of the installation, removal or maintenance of channelization devices. Records consist of device drawings with location information, notes indicating type of work to be performed, date of work instruction request and date work completed by maintenance crew.	OFM			End of Calendar Year	10 Years	GS50-18-24	
	TRAFFIC OPERATIONS - SIGN SHOP							
38.	**Sign Production Files** Files contain documentation of orders and billings for signs. May include work orders, sign type, material and labor expense sheets and work instructions.	OFM	Resource Management		End of Calendar Year	3 Years	GS50-03A-02	
39.	**Sign Design System** Traffic Cad system used to create and track sign designs. May include information on sign specifications such as size, color, shape and materials used.	OFM			End of Use	1 Year	GS50-01-02	

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1. AGENCY TITLE City of Seattle	**2. DEPARTMENT/DIVISION TITLE** Seattle Department of Transportation (SDOT)	**3. OFFICE/SECTION TITLE** Traffic Management (19.04.00)	**4. DATE SUBMITTED** June 24, 2002

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7. RECORDS MANAGER SIGNATURE (Required)
I hereby certify that I have prepared this schedule in compliance with current federal, state, and local regulations, and I ensure it's accuracy.

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	TRAFFIC OPERATIONS - TRAFFIC COUNTS							
40.	**Arterial Street Films** Films (35 millimeter) taken of arterial streets to document changes to the street system over time. Files are used to support investigations and for post construction restoration projects.	OFM			Project Completion	10 Years	05-02-0298	
41.	**Traffic Management Database** Database system used to track data collected during traffic count, vehicle classification and speed studies. Data is used to generate traffic study reports.	OFM			End of Calendar Year	10 Years	052-02-0299	
42.	**Traffic Study Reports** Documentation of various types of traffic studies including; traffic counts, turning movement counts, pedestrian studies, parking usage, vehicle classification, speed studies, travel time delays, origin and destination studies, ball bank and occupancy studies. Files may include work requests, data field sheets, schematics, maps and data compilations. Used to support investigations, traffic control projects and seasonal count reporting.	OFM			End of Year or Upon Revision Whichever is Later	10 Years	GS50-18-34	Potentially Archival

AGENCY MANAGER SIGNATURE: Robert Miller	AGENCY ARCHIVIST SIGNATURE: Scott Cline

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Attachment to the Western Systems Purchase Order

1. Overview

1.1. The City of Seattle is purchasing data as a service. Western Systems owns, operates, and is responsible for maintenance and replacement of the hardware used to gather the data, per the terms outlined below.

1.2. The City has tested the performance of this data service and is satisfied with the ability for this data service to deliver travel time, delay, analytics and other data and data services, as compared to the City's existing approaches to gathering and analyzing the same data. However, this service has not been widely deployed, and there is little in-service data available to understand the overall performance of the service. Therefore, the first year of the deployment should be considered a trial period. During this period, the City will develop a data service performance measurement approach, and associated contractual terms that will be applies to subsequent years, if the data service is continued past the first year.

2. Terms – First Year of the Contract

2.1. These terms will be reevaluated and may be modified if subsequent years of service are purchased. If these terms are not explicitly modified, they will remain in force over any subsequent years of purchasing.

2.2. The City intends to monitor the performance of the individual devices using the analytics tool. Specific performance measures to be monitored have yet to be determined. As an example, a performance monitor may be tracking match rates over time to ensure a particular site maintains performance.

2.3. Devices.

2.3.1. If, in the City's sole discretion, a device is not performing adequately, Western Systems shall replace the device within 2 working days of notification of inadequate device performance (replacement time is contingent on the availability of SDOT crew support). If upon replacement, the device site continues to perform inadequately, the City will no longer pay for that site until it is repaired to the satisfaction of the City.

2.3.2. The total number of device sites replaced based on the City's sole discretion shall not exceed 20% of the total devices installed.

2.3.3. If more than 20% of the total devices installed are, per the City's discretion, not performing adequately, the City will no longer pay for any portion of the system, and will notify Western Systems to remove the system, and the field devices, and the contract will be terminated.

2.4. Analytic Software

2.4.1. If the City, in their sole discretion, determines that the analytics software is producing unacceptable travel time and delay metrics to such an extent that the City will not use the data for public information or their own analysis purposes, the City will notify Western Systems of the issue. Within 3 days, Western Systems must test the software and respond with a remediation plan and schedule to resolve the issue. If the issue is not resolved within the Contractor-stated time period, or if the issue lasts longer than 3 calendar months, the City will no longer pay for any portion of the system, and will notify Western Systems to remove the system, and the field devices, and the contract will be terminated.

2.5. Data Security

2.5.1. It is the understanding of the City that the data gathered are encrypted to fully eliminate the possibility of identifying individuals or vehicles. In no event shall City or Western Systems and its subcontractors make any use of the data gathered by the devices for any purpose that would identify the individuals or vehicles included in the data.

2.6. Ownership and Licensure of Data

2.6.1. Nothing in this Purchase Order precludes the parties from negotiating future changes to the data ownership and licensure terms, specifically with respect to reselling of the data.

2.7. Installation, and Ongoing Operations and Maintenance

2.7.1. Devices under this Purchase Order are intended to be installed inside SDOT-owned traffic signal controller cabinets. Power to the devices will be supplied by SDOT. Western Systems will not be charged for the privilege of placing the device in SDOT cabinets, or for the power to each device.

2.7.2. Western systems will not be charged for any SDOT labor required for the initial installation and configuration of the devices included in this deployment. Western Systems will provide all devices, including antennas and required cables, seals and attachment hardware to SDOT. SDOT shall install all required devices. Western Systems shall provide SDOT with procedures, sketches, requirements, or instructions to ensure proper device installation. Western Systems is responsible for ensuring that the devices are installed to their own satisfaction.

2.7.3. After the initial deployment, any costs incurred by SDOT related to maintenance or removal of devices from cabinets will be borne by Western Systems. SDOT will charge Western Systems their normal costs for such work. SDOT will respond to Western Systems request for access to a cabinet within 2 working days.

2.7.4. SDOT assumes no responsibility for any devices that are damaged due to SDOT or third party actions. All costs for replacement of damaged devices, damaged for any reason, will be borne by Western Systems.

2.7.5. If SDOT replaces a cabinet, or if a cabinet has been removed due to a crash, SDOT will inform Western Systems no less than 2 days prior to cabinet replacement, so that new devices can be supplied to SDOT for installation.

2.7.6. If SDOT-owned equipment is damaged due to the device, or its installation, including water intrusion from cabinet penetrations made for the purpose of installing the device, Western Systems is wholly responsible for paying for the replacement of the damaged equipment.

March 14, 2019

Jason Cambridge
Seattle Department of Transportation
700 5th Avenue
Seattle, WA

Dear Mr. Cambridge,

Thank you for taking the time to meet with me on the 14th of March to discuss data privacy and ownership. When we started working with Seattle DOT in 2014, we committed that the only parties who would have access to the data generated by Seattle DOT would employees and those individuals which authorized users had granted access to the Acyclica software. FLIR's contractual obligations for data and support have been governed by the terms of use and the contract which our intermediary, Western Systems, executed with Seattle DOT. Some of these users, as designated by Seattle DOT have also been granted APIs for programmatically accessing aggregated data.

Moving forward, we renew our commitment to data privacy and security. FLIR will not grant access to Seattle DOT data to anyone without the express, written consent to do so. As the needs of Seattle DOT evolve, we are open to implementing additional measures to protect privacy of individuals while providing the best insights through the Acyclica platform.

Best Regards,

Daniel Benhammou

Senior Director, Software and Solutions

FLIR Systems, Inc.

iCITE ®

Intelligent Cabinet Interface to Traffic Equipment

Data Aggregator DA-300®

A data and communications rich hardware platform that transforms legacy or isolated traffic cabinets into real-time traffic data reporting and count stations

iCITE® Data Aggregator DA-300® is a hardware platform that interfaces to traffic controllers, communications enabled detectors and MMUs/CMUs at remote or networked intersections. The DA-300® can provide real-time intersection data to your existing ATMS data set, in addition to cabinet health and GPS-based time sync. It is able to generate critical intersection and cabinet status alarms and provide real-time notifications via SMS or e-mail. Easily installs in Type 170/2070, NEMA TS-1, TS-2, ITS or ATC style traffic cabinets. Simplified interface with EDI or Reno A&E MMUs/CMUs for data retrieval.

In cooperation with any *iCITE Ready™* data analytics partner, the DA-300® can provide turning movement counts, amber/red actuations, arrivals on red, detector failures, preemption details, communications and power failures/alerts, split and interval timing data, travel time and the Purdue Coordination Diagram (PCD), based upon Hi Resolution Data, all tailored to provide Automated Traffic Signal Performance Measures (ATSPM) via a Cloud-based user-friendly interface. Wi-Fi equipped and travel time ready.

FEATURES

• Data and communications rich hardware platform

• Transforms legacy traffic cabinets into count stations

• Easily interfaces with controllers and detectors

• Safely retrieve critical data from an MMU/CMU

• Add remote intersection data to your ATMS data set

• Provides cabinet health and GPS-based time sync

• Internal battery back-up for critical alarm generation

• Access remote intersections via 3G/4G/LTE cellular

• Travel time ready via Wi-Fi or Bluetooth sensors

• Interfaces with any *iCITE Ready™* data analytics provider

• 5-Band antenna covering GSM/GPRS/LTE, GPS, Wi-Fi, BlueTooth, DSRC bands

• Shelf or rack-mounted installation

3510 East Atlanta Avenue Phoenix, Arizona 85040 USA   +1.480.968.6407   WWW.EDITRAFFIC.COM

EBERLE DESIGN INC.

Data Aggregator DA-300®

FUNCTIONALITY

Connectivity	
Cell Modem	Yes - 3G/LTE/GSM/GPRS (Standard); 4G (Optional)
Wi-Fi	Yes - Travel Time (Receive only- Cannot be used as a WLAN)
Ethernet Port	Standard - 2 ports (10/100 Base -T)
EIA-232	Yes
SDLC	Standard (Easy connectivity with NEMA TS-2 controllers & MMU's)
USB	Standard - 2 ports
BlueTooth	No (Available as an option)
Aux. Ports (Qty. 8)	Standard (RS-485 inputs from Communicating Detectors)

Cabinet I/O	
Analog Inputs	16 (8 X 120 VAC; 8 X 24 VDC)
Digital Inputs	20 (16 X 24 DC; 4 X 24 VDC; 16 detectors; 4 peds)
Time Sync	Normally Open and Normally Closed with user selectable time
Digital Outputs	3 (either Normally Open and Normally Closed 5A relay)

Miscellaneous	
Operating System	Linux - Ubuntu 12.04.2 LTS kernel ver. 3.15.3
GPS	Yes - Geolocation with Time Sync
Operating Temperature	-40ºF to 176ºF / -40º C to 80º C / Standard Industrial temp. range
Humidity	0 - 95% Non-Condensing
Dimensions	5.487" (D) X 8.18" (H) X 3.5" (W). (13.936 cm X 20.772 cm X 8.89 cm.)
Weight	3.6 lbs. / 1.62 Kg
Power Input Voltage	8 - 28 VDC (2A 250V 5mm X 20mm Fast-blo fuse)
Real Time Clock	Yes
Flash Disk	Yes
Battery Back Up	Yes - allows communications and remote logging up to ~5 hours
Battery	Non-Spillable Sealed Lead-Acid 6 VDC 4.5Ah

Protocols	
SDLC	Yes - Standard (TS2 or TS2 Type 2 cabinets only)
RS-485	Yes - Standard up to 32 channels of input
iCITE™	Yes - used to connect to iCITE™ G2™

Other	
Solar Power Capable	Yes
Antenna	Yes - 5 band (Cellular, GPS, Wi-Fi, BT and DSRC)
Antenna Bracket	Optional side mount to traffic cabinet
DSRC / SPaT	No

- Detector information from NEMA TS-1, TS-2, or Type 170/2070 cabinets using RS-485 Serial Communications for up to 32 channels

- (Optional) Monitors and logs Wi-Fi polling requests for Travel Time and Origin-Destination reporting in *iCITE G2™* Cloud based software

- Detector and signal information from NEMA TS-2 cabinets using SDLC communications to provide additional data

- Remote access to non-interconnected intersections with 3G/4G/LTE Cellular Communications

- Compatible with High-Speed Wired or Wireless Networks

- Provides back-up of critical communications from intersections that are connected to a central ATMS system

- Communications and interfaces use 2048-bit encryption to ensure both device and network security

- Cabinet Health Monitors
  - Ambient temperature
  - Battery backup system
  - Heater / fan
  - Cabinet door
  - Stop time
  - AC/DC power
  - Intersection flash
  - Primary communication
  - and more...

Notes:

If a specific cellular carrier is preferred, or existing service plans will be used for cellular data, please specify carrier at the time of order. In USA only, deeply discounted plans can be provided along with the device from AT&T, T-Mobile or Rogers. International cellular providers need to be verified for device internal modem compatibility prior to order.

Custom configurations of Analog and Digital I/Os available for volume orders.

iCITE®, iCITE Ready™, iCITE G2™, DA-Data Aggregator™, DA-300® are Registered Trademarks of Eberle Design, Inc.

Seattle Department of Transportation

Denny Way Project Report

Acyclica Travel Time
Accuracy & Reliability Analysis

Adiam Emery, Arun Somasundaram, David Nguyen, Matthew Thomas, Tyler Cheng

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1.0 Introduction

The collection of travel time data is critical in the transportation sector. This is especially true in large, growing cities like Seattle. This data has many widespread uses such as informing the public about congestion levels and helping transportation engineers and urban planners make the best decisions. Consequently, the collection of accurate data in a reliable and cost effective manner is invaluable. This report compares two different technologies used to collect travel time data: License Plate Readers (LPRs) and Bluetooth/WiFi Readers. LPRs are a mature technology that has been in use for over thirty years, while Bluetooth/WiFi Readers are relatively new. The Seattle Department of Transportation (SDOT) currently uses LPRs on major arterials to determine travel time. Acyclica is a company that specializes in transportation technology innovations. Acyclica's Cross Compass readers were installed on the Denny Way corridor in downtown Seattle, which is the study area for this project. SDOT has LPR sensors installed on that same stretch of road, providing construct validity to the side by side comparison. The important factors of comparison between the two systems are the accuracy and reliability of the travel time data outputted. Various statistical analyses were performed to reach a conclusion on whether Acyclica's sensors are a suitable replacement for SDOT's LPRs.

1.1 Background Information: LPRs

LPRs operate by collecting license plate information from passing vehicles to calculate travel time readings. As the process is repeated for several vehicles over a given time interval, assumptions can be made about the road conditions on that arterial [1]. Each system has its pros and cons. The pros and cons for LPR are as follows:

Figure 1. LPRs [2]

Pros

- Has matured significantly over thirty years
- Collected data is reliable and was considered the "ground truth" for this analysis

Cons

- Each unit costs up to $25,000 including installation
- Weather and lighting conditions may affect ability to read a license plate
- Privacy concerns exists in regards to license plate number collection, which is linked to the driver's personal information [1]

1.2 Background Information: Bluetooth & WiFi Sensors

Bluetooth and WiFi are common components of mobile technologies in this generation. Marketing Land estimates that 56% of adults in the United States own smartphones [3]. This number will only grow larger as mobile technology expands. Bluetooth & WiFi detectors take advantage of these devices by collecting unique identifiers referred to as MAC addresses. Travel time is then calculated by matching these identifiers between consecutive sensors on a stretch of roadway. For this report, the product analyzed was Acyclica's Cross Compass reader. Some of the pros and cons for WiFi/Bluetooth sensors are as follows:

Figure 2. Cross Compass [4]

Pros

- Cheaper to install compared to LPRs ($1,000 - $8,000 per location)
- Not sensitive to weather and lighting conditions
- Low maintenance
- Less privacy concerns. MAC addresses are not directly linked to personal data

Cons

- Bluetooth sensors have low detection rates, unless combined with WiFi
- Future of Bluetooth & WiFi sensors depend on its prevalence in mobile technology, which is still growing and changing [1]

2.0 Data Source

This report used the data collected by SDOT's LPRs on Denny Way in downtown Seattle. The data was then compared to the data collected by Acyclica's Cross Compass readers over the same stretch of road. While both methods were ultimately collecting travel time data, the manner in which the data was collected and reported differs. Figure 3 displays the stretch of road analyzed as well as the locations of Acyclica's sensors.
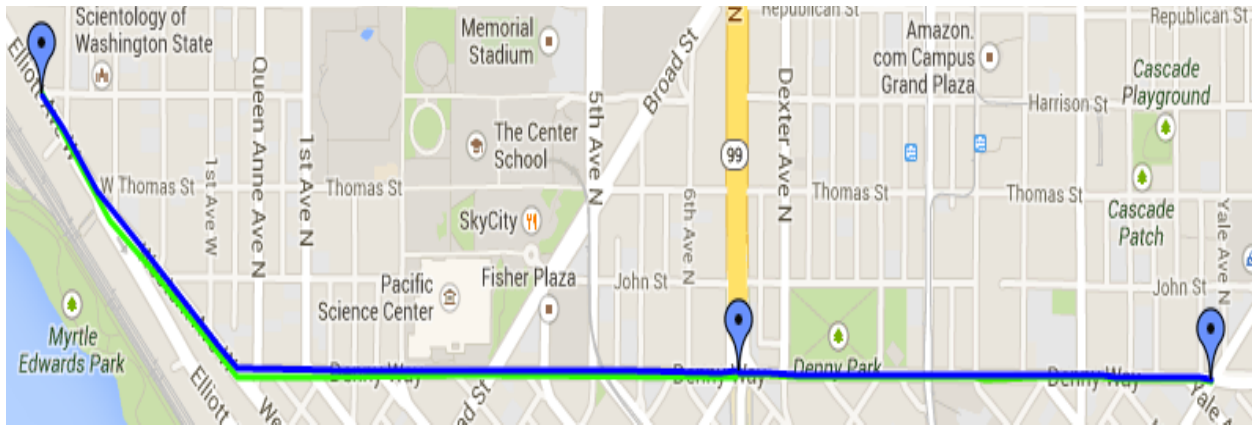
Figure 3. Denny Way [5]

2.1 SDOT LPR data

The LPR travel time data was collected via segments along the Denny Way corridor. These segments are divided as follows:

- Eastbound (EB) direction
    - EB segment 1 = Elliott & Harrison to Denny & *Dexter*
    - EB segment 2 = Denny & *Dexter* to Denny & Stewart
- Westbound (WB) direction
    - WB segment 1 = Denny & Stewart to Denny & *Dexter*
    - WB segment 2 = Denny & *Dexter* to Elliott & Harrison

Both eastbound and westbound travel times were analyzed in this study. A single reading of the LPR data provides the average travel time for all observed vehicles over a five minute interval. A 'zero' in the travel time data implies that no vehicles were detected during that time interval.

2.2 Acyclica Cross Compass data

Acyclica's travel times were also collected based on segments within the corridor. These segments are as follows:

- Eastbound (EB) direction
    - EB segment 1 = Elliott & Harrison to Denny & *Aurora*
    - EB segment 2 = Denny & *Aurora* to Denny & Stewart
- Westbound (WB) direction
    - WB segment 1 = Denny & Stewart to Denny & *Aurora*
    - WB segment 2 = Denny & *Aurora* to Elliott & Harrison

Although the Acyclica data was also collected using segments, the travel times were displayed for the entire corridor and were not broken down into the specified segments. Both eastbound and westbound travel times were also analyzed.

Another difference in Acyclica's data is that the location of the middle detector is not the same as SDOT's sensor. As shown previously, SDOT's middle sensor is located at Denny & *Dexter* while Acyclica's reader is located at Denny & *Aurora*. Details on the implications of this difference are explained in section 4.2.2 Match Rates.

One drawback of the Cross Compass is that the reader cannot use WiFi and Bluetooth simultaneously. Only one sensor type was turned on at a time because having both sensors on concurrently may cause interference between the two signals. All sensors along the study area must also use the same type of sensor because MAC addresses are different between WiFi and Bluetooth on a single device. Therefore, one sensor cannot have WiFi turned on while another has Bluetooth turned on. For this study, only the WiFi component was used. Both the LPR and Cross Compass data were displayed as the average travel time for all vehicles within five minute intervals.

Another important aspect of Acyclica's detector to note is that it is not directly capturing vehicle data. While the LPRs are collecting license plate information to calculate travel times, Acyclica's detectors can only collect travel times of vehicles that have WiFi enabled devices. The implications these differences had on the results are explained in section 4.2.2 Match Rates.

Acyclica provided many different travel times based on different algorithms. The travel times displayed by Acyclica are as follows:

- Strength
- First
- Last
- Minimum
- Maximum

After analysis of the algorithm definitions, it was agreed upon by SDOT staff members to use the 'Strength' travel times for this analysis. The 'Strength' travel times used an algorithm that calculated travel times when a predetermined signal strength threshold was met (calibrated by Acyclica). This signal strength threshold was calculated to be the ideal borderline for accurate travel time calculations. This algorithm made the most sense for comparison to SDOT's readings in contrast to the other algorithms.

3.0 Data Quality Control & Homogenization

In order to perform an accurate analysis and comparison between the two datasets, homogenization of the data was required. Aside from reformatting the datasets for side by side comparisons, the collected data had to be eliminated of unnecessary or inaccurate outliers. Both datasets displayed travel times in units of seconds, which was left unchanged.

It was agreed upon by SDOT staff members that one week of data was sufficient for this analysis. The exact date and time parameters were as follows:

- Start: 0:00, January 12, 2014 (Sunday)
- End: 23:55, January 18, 2014 (Saturday)

3.1 Homogenization of Denny Way

Since the Cross Compass displayed travel times for the entire Denny Way stretch as opposed to the LPR's two segments, the data needed to be standardized to accommodate this. In order to get the LPR travel times for the entire Denny Way stretch, the average travel times were summed for both segments with respect to the corresponding time intervals. Thus, the datasets were standardized to present the travel times for the entire corridor from Elliot/Harrison to Denny/Stewart. In short, only SDOT's data was modified in this step.

3.2 Replacement of Zeroes

A 'zero' for the travel time indicated that the LPR or Cross Compass detectors were unable to detect a vehicle over a five minute interval. While this is reasonable from 12 AM – 6 AM, zeroes should not occur during peak hours on Denny Way. The occurrence of a zero during that time frame most likely implies that the sensors were unable to capture vehicles. For LPRs, non-ideal weather and lighting conditions may cause this. For Acyclica's readers, poor detection rates may be due to the absence of vehicles that contain WiFi or Bluetooth enabled devices. Zeroes for a time interval are replaced with the travel time in the preceding five minute interval. This assumes that travel times remain unchanged from the previous successful reading.

Acyclica has a filtering algorithm that removed zeroes and extreme outliers from their dataset. As a result of this, Acyclica's dataset had no zero readings. Acyclica also replaced zero readings with the prior reading, which made data homogenization simple.

3.3 Inspection of Outliers

Unlike zeroes in the dataset, outliers cannot be removed and replaced as they represent captured data. The following procedure was used to identify the upper and lower fences for outliers.

- Find the interquartile range by taking:
  - Range = Q3-Q1 (3rd Quartile subtracted by the 1st Quartile)
- Multiple inner quartile range by 3 to find the "outer fence" of the data
  - Add outer fence to Q3, and subtract outer fence to Q1

These outer fences provided a preliminary indication of which data points were potential candidates for omission from the dataset. Another aspect examined was how large of an impact those outliers had on the mean. If those outliers caused the dataset to be skewed or misleading, there was a greater chance they had to be omitted. Further justification was required on whether to keep or omit certain outliers (e.g. the time of day or the date). If there was reason to believe the outlier was not the result of an error, it is kept. The outlier may also be kept if it could explain a new discovery or trend.

Travel times above the upper fence and below the lower fence were considered for omission. Table 1 below indicates the fences for eastbound and westbound data for both LPR and Cross Compass.

Table 1. Dataset Fences

Statistical Measures	SDOT LPR		Acyclica Cross Compass	
	Westbound	Eastbound	Westbound	Eastbound
Inner Quartile Range	144.2	130.0	79.1	59.7
Outer Fence	432.6	390.0	237.3	179.1
Upper Outer Fence	852.8	826.0	630.5	605.5
Lower Outer Fence	0	0	76.8	187.6

The data above and below the designated fences had to be examined prior to a decision regarding its omission. One example is data below the lower outer fence for the LPRs. The outliers occurred primarily from 12 AM to 6 AM and indicated very short travel times (55 - 75 seconds). The Denny Way corridor has a 25 mph speed limit that spans approximately 1.6 miles (from Elliot and Harrison to Denny and Stewart). This means that the ideal travel time from one end to the other is 3.84 minutes or approximately 230.4 seconds. This did not take into account delays, which implies the vehicle was travelling a constant 25 mph throughout the length of the corridor. A travel time of 55 seconds implies the vehicle was travelling at around 105 mph without stopping at red lights. Since very few vehicles are passing through the corridor from 12 AM - 6 AM, the collected data may not be representative of travel times during that time period. In contrast to the LPR data, the smallest non-zero value below the lower outer fence for Acyclica's Cross Compass was 265.7 seconds.

In terms of the higher values overall, westbound LPR values were consistently larger compared to eastbound, except for the maximum eastbound value (2,795 seconds). The top eight largest values in the westbound direction all occurred on 1/17/2014 between 6 PM and 8 PM, which is Friday PM peak hours. The largest westbound value was 1,815 seconds, which equates to approximately 30 minutes of travel time. Compared to the westbound direction of the LPR data, the numbers were not nearly as high for the Cross Compass data; however the largest values still occurred within the same general timeframe (7 - 8 PM on Friday the 17th). The large values for Acyclica were much lower however, staying close to the 1000 seconds range. The highest value for Acyclica was 1,007.9 seconds, which is approximately 17 minutes.

A travel time of 30 minutes on Denny Way is possible, but highly unlikely (as per the LPR data). On the other hand, 17 minutes is much more probable (as per Cross Compass Data). LPR sensors are known to perform poorly during instances of low volumes and high volumes, which should point to the fact that these extremely low and high values found in the LPR dataset are questionable in terms of accuracy. Since these extreme values are occurring in the early morning and during peak hours, this should be an indication of low and high volumes respectively.

After thorough examination of the data, it was agreed upon to keep the non-zero outliers in the analysis for the listed reasons:

- High and low values for LPR data occurred consistently at the appropriate time periods
- Most of the Acyclica data fell within the outer fences, except for the extreme high values, which were much smaller compared to the LPR data
- Both systems already have filtering algorithms in effect to remove extreme values
  - Therefore, keeping the outliers could reveal weaknesses in the two detection systems and the respective filtering algorithms

3.4 Cleaned Data

To summarize, the following was completed for homogenization and quality control of the raw data up to this point:

- LPR road segment travel times were summed to display travel times representative of the entire Denny Way stretch (to match Acyclica travel times)
- LPR zero readings replaced with the travel time from previous five minute interval (to match Acyclica data)
- Outliers were identified, but kept for analysis to reveal weaknesses in the respective systems' filtering algorithms

Table 2 provides a side by side comparison of the SDOT LPR and Acyclica Cross Compass travel time data after homogenization and cleaning. Both of the datasets were standardized to provide travel times data in a similar format. Additionally, both datasets show travel time from Elliot & Harrison to Denny & Stewart.

Table 2. Descriptive Statistics

Statistical Measures	SDOT LPR		Acyclica Cross Compass	
	Westbound	Eastbound	Westbound	Eastbound
Minimum	55.0	64.0	265.7	302.8
1st Quartile	276.0	306.0	314.1	366.7
Median	350.0	386.0	356	390.6
Mean	356.2	363.1	367.7	400.5
3rd Quartile	420.2	436.0	393.2	426.4
Maximum	1,815.0	2,795.0	1,007.9	599.5
Variance	31,251.4	22,020.9	7,404.7	2,885.8
Standard Deviation	176.8	148.4	86.1	53.7

Acyclica's Cross Compass standard deviations are much smaller compared to LPR's data. This could indicate that Acyclica was more consistent when it came to capturing data (lower variability). LPR also had more extreme values, which reinforces the point that Acyclica seemed to be more consistent. It is also noteworthy that Acyclica had higher average travel times. Average travel times were higher in the eastbound direction for both detection systems, which was a good sign.

4.0 Results

4.1 Accuracy

4.1.1 Accuracy Hypothesis Testing

The objective of accuracy hypothesis testing in this study was to determine if the mean value of Acyclica's travel time data was the same as the LPR data (within a 95% level of confidence).

It was decided that a t-test would be an appropriate measure to reach this objective. The f-test is typically used to determine the type of t-test that will be conducted (equal or unequal variance). However, an investigation of the variance values of the two datasets (Table 3) prior to performing the f-test revealed that the variance values of LPR and Acyclica were significantly different from each other. Therefore, it was confirmed that a two-tailed t-test with unequal variances was to be used.

Table 3. Variances Comparison

Detector	Direction	Variance
LPR	Westbound	31,251.4
	Eastbound	22,020.9
Cross Compass	Westbound	7,404.7
	Eastbound	2,885.8

If the p-value in a two-tailed t-test with unequal variances was less than 0.05 (as per the 95% confidence interval), then the mean value of the LPR and Cross Compass data differed.

The null and alternative hypotheses of the t-test conducted are stated below.

- Null Hypothesis: The difference between the mean of LPR travel times and the mean of Cross Compass travel times is zero.
- Alternative Hypothesis: The difference between the mean of LPR travel times and the mean of Cross Compass travel times is not zero.

A confidence level of 95% is widely used for examining the null and alternative hypotheses. If the p-value from the t-test was smaller than 0.05, the null hypothesis is rejected. If the p-value is larger than 0.05, then there is no evidence that the null hypothesis should be rejected. Table 4 displays the results of the unequal variance t-test.

Table 4. Unequal Variance T-Test

Direction	p-value	Mean Value	
Westbound	8.9e-3	LPR	356.2
		Acyclica	367.7
Eastbound	< 2.2e-16	LPR	363.1
		Acyclica	400.5

From the results shown, the p-values from the t-test for both directions are smaller than 0.05, which indicates that the differences between the mean value of LPR and the mean value of Cross Compass in both directions is not zero. Consequently, the null hypothesis was rejected.

4.1.2 Correlation Hypothesis Testing

Correlation testing is a useful indicator of predictable relationships between two comparable datasets. The goal of this test was to examine if these two datasets had some degree of dependence.

There exist a few different correlation coefficients, which reflect the degree of correlation. The one that is most commonly used is the Pearson correlation coefficient. This coefficient ranges from -1 to 1. A value of -1 indicated that the two datasets had a perfectly inverse relationship, while a value of 1 indicated that the two datasets had a perfect direct relationship. Table 5 shows the result of the correlation test in both directions.

Table 5. Pearson's Product Moment Correlation Test

Direction	t-value	df	p-value	Correlation Estimate
Eastbound	18.41	2014	< 2.2e-16	0.38
Westbound	32.10	2014	< 2.2e-16	0.58

Where:

- t-value: a measure of the statistical significance of an independent variable on a dependent variable
- df: degrees of freedom, the number of values in the t-test that are free to vary

The values of the Pearson correlation coefficients for both directions are positive, which indicates that LPR and Cross Compass travel times had a direct correlation relationship in both directions. Note that the coefficient value westbound is slightly higher than that of eastbound. This indicates that the direct relationship between the two datasets were stronger (more correlated) in the westbound direction compared to eastbound.

4.1.3 Covariance test

Similar to the correlation test, a covariance test measures the linear relationship between two datasets. A positive covariance indicates that there is a positive linear relationship between the two datasets and a negative covariance indicated that there is a negative linear relationship. A larger covariance implies similar behavior between the two datasets. The results of the covariance tests are as follows:

Table 6. Covariance

Direction	Covariance Coefficient
Eastbound	3,025.6
Westbound	8,849.5

The results are consistent with the results obtained from the correlation tests. The covariance between the two detection systems is positive in both directions. This indicates that both datasets behave similarly.

4.1.4 MAE

MAE, or Mean Absolute Error, is widely used to quantify how close forecasted values are to measured values. The absolute value of the difference between the forecasted and actual value was calculated, and summed up over the desired interval. This was subsequently divided by the number of paired data points in that interval.

$$\text{MAE} = \frac{1}{n}\sum_{i=1}^{n}|f_i - y_i| = \frac{1}{n}\sum_{i=1}^{n}|e_i|.$$

In the equation shown, f_i is the forecasted value and y_i is the actual value. The LPR data was treated as the actual values while the Acyclica Cross Compass data as the forecasted values. The MAE value was found for each day in the eastbound and westbound direction. This data was interpreted as the average error of the forecasted value over the interval, which in this case was 24 hours. Table 7 displays the MAE of Acyclica's Cross Compass travel times based on SDOT's LPR data.

Table 7. MAE

Date	Westbound	Eastbound
1/12/2014	61.8	51.5
1/13/2014	97.6	82.6
1/14/2014	95.1	91.4
1/15/2014	118.1	107.8
1/16/2014	105.5	104.8
1/17/2014	92.2	158.8
1/18/2014	80.9	69.5
Average	93.0	95.2

The results indicate that across all seven days, the Cross Compass travel times were approximately 95 seconds apart from LPR data in the eastbound direction and about 93 seconds apart in the westbound direction. In other words, Acyclica's travel times generally had about a 1.5 minute difference from SDOT's measurements.

Interestingly, the average error jumped on the 15th and 16th (Wednesday and Thursday respectively) compared to other days in the week in both directions. Also, the average error was generally higher during the week days. This could indicate that Acyclica's sensors had a more difficult time collecting travel time readings that were closer in value to LPR's readings. As a result of this, a more in depth investigation was conducted. The MAEs were compared only on the week days during the AM peak (6AM – 10AM) and the PM peak (3PM – 7PM). These days and time periods are also the most important to SDOT as they are the busiest hours. Figure 4 displays the weekday AM peak MAE comparison and Figure 5 displays the PM peak comparison.
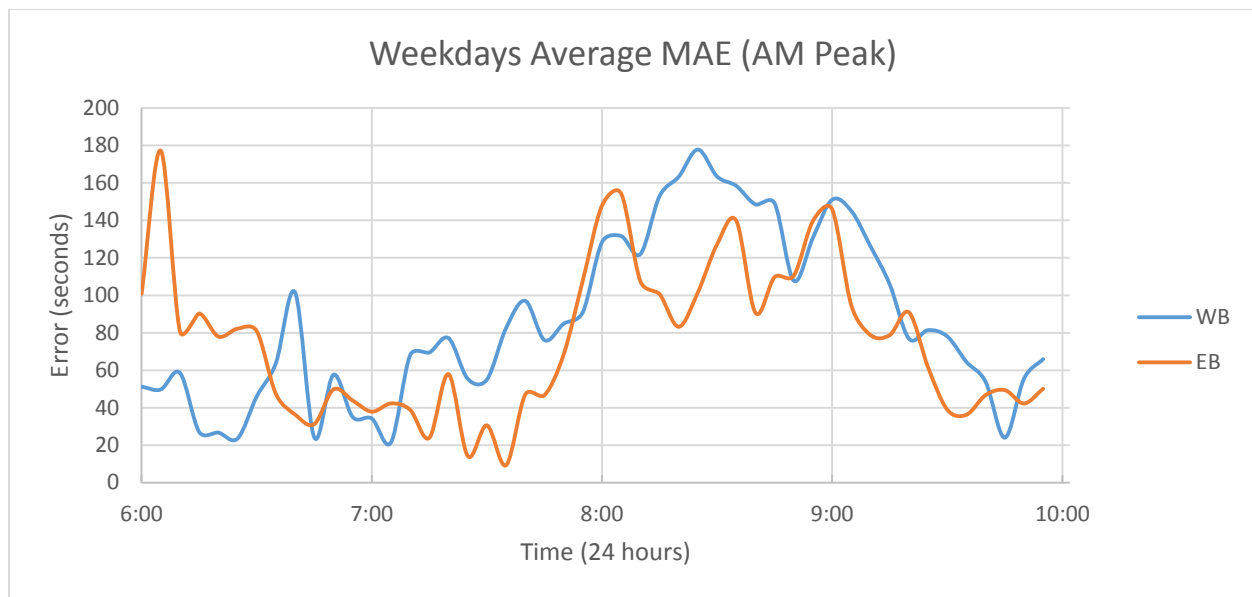
Figure 4. Weekday MAEs (AM Peak)

In order to create the above figure, the MAEs of each weekday time interval were averaged. This resulted in a weekday average MAE reading at each five minute interval. These averages were then plotted for an entire peak period. Figure 4 shows that the error starts to increase at around 7:30 AM and peaks at around 8:30 AM. The differences reach up to approximately 180 seconds (about three minutes).This was concerning because this portion of the AM peak is when traffic volumes are the highest (commuters). This indicated that as more vehicles populated the road, the differences between the two sensors' travel time readings increase. A comparison for the PM peak was completed in Figure 5.
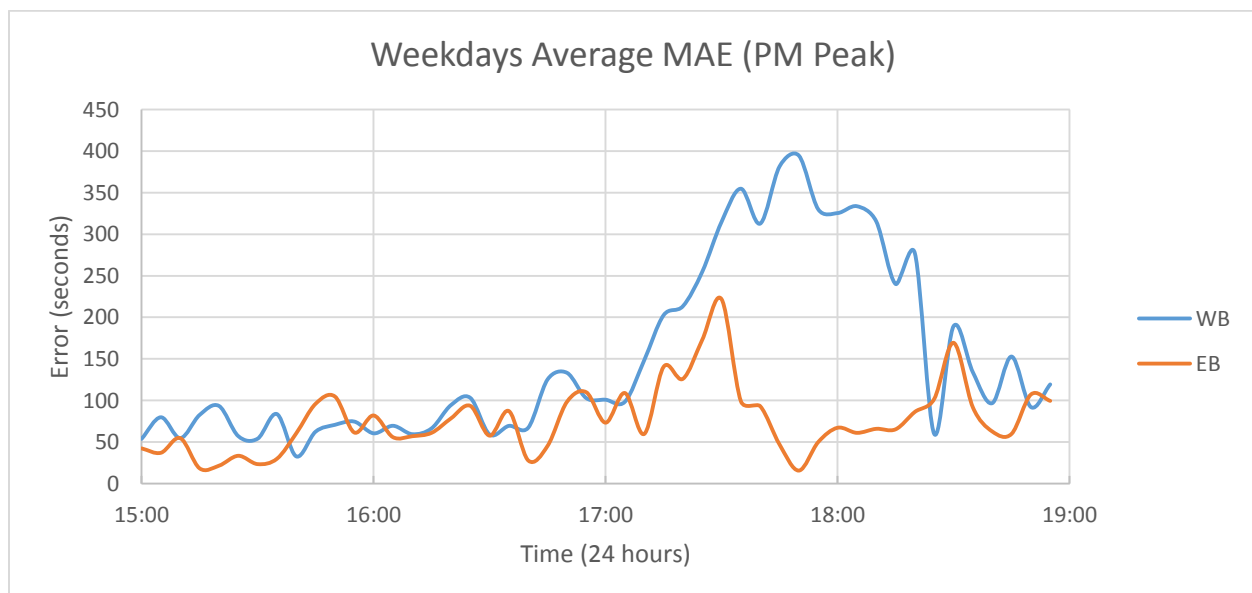
Figure 5. Weekday MAEs (PM Peak)

The trend in the PM peak is similar to the AM peak. The busiest section of the peak hours was when the errors increased. In the PM peak, this was around 5 PM and 6 PM. This was especially problematic in the westbound direction, as differences reached up to about 400 seconds. This equated to 6 - 7 minutes of differences. There were two possible explanations for this observation. The first possible explanation is that Acyclica had problems collecting accurate travel times as the number of vehicles increased. This is assuming that LPR was perfect in capturing data during those situations. However, LPR has been known to perform poorly during these situations. Therefore, the second explanation was that LPR travel times were inaccurate, and Acyclica was unable to closely match those inaccurate numbers. It could've also been likely that both LPR and Cross Compass sensors struggled during high volume increases, therefore magnifying those differences.

4.1.5 MAPE

MAPE, or Mean Absolute Percentage Error, is often used to measure the accuracy of a dataset compared to another expressed as a percentage value. The MAPE was calculated using the equation below. It calculates the cumulative accuracy of one dataset's points to another over a certain interval.

$$\mathrm{M} = \frac{100\%}{n} \sum_{t=1}^{n} \left| \frac{A_t - F_t}{A_t} \right|,$$

In the equation above, A_t is the actual value and F_t is the forecast value. In this case, the LPR data was treated as the A_t and the Acyclica Cross Compass data was treated as the F_t. The MAPE value was found for each day in the eastbound and westbound direction. Table 8 presents the MAPE of Acyclica travel times compared to SDOT's data.

Table 8. MAPE

Date	Westbound	Eastbound
1/12/2014	27.2	33.3
1/13/2014	50.0	56.0
1/14/2014	48.1	58.7
1/15/2014	49.0	56.9
1/16/2014	45.2	57.9
1/17/2014	53.9	49.1
1/18/2014	29.5	34.5
Average	43.3	49.5

The results conclude that Acyclica's travel times were roughly 43% different from SDOT's data in the westbound direction, and were about 49% different eastbound across the study period. This is essentially telling the same story as the MAE results, expressed in differing units. The MAE results showed a slightly higher average error in the eastbound direction compared to the westbound direction. The MAPE results showed the same trends overall.

4.1.6 Confidence Interval

Confidence intervals are typically used to determine reliability and accuracy of estimated values against reference values. In applied science and practical applications, the 95% confidence level has been widely considered an acceptable threshold for accuracy and was therefore used in this analysis as well.

In this report, the confidence intervals were calculated for four different time periods: westbound morning peak, eastbound morning peak, westbound evening peak, and eastbound evening peak. The AM peak was defined as 6 AM – 10 AM and the PM peak was defined as 3 PM – 7 PM. Due to the distinct nature of the two technologies compared, performance during peak periods was more suitable for illustrating their ability to calculate travel times in higher volumes, where both systems are known to have shortcomings.

The LPR's confidence intervals are calculated and displayed in Figure 6 through Figure 9. Averaged values of the Cross Compass travel times are also shown in the four figures. In each figure, the blue points represent the average values of LPR travel times, the bars above and below the blue points display the confidence interval thresholds at a 95% level of accuracy. The green points represent Acyclica's Cross Compass average travel times for that date.

One reasonable interpretation of the confidence interval tests is that there was a 95% probability that the calculated LPR confidence intervals encompassed the true values of travel times during the morning peak periods. Therefore, if Acyclica data points fell within the LPR confidence intervals, there is a 95% level of confidence that the Cross Compass data is accurate.

Figure 6 displays the LPR confidence intervals and the averaged values of the Cross Compass travel times in the westbound morning peak period. 2 out of 7 Acyclica data points fell within the LPR confidence intervals. This indicates that Acyclica's data was accurate 29% of the time within a week (2/7 = 0.286).
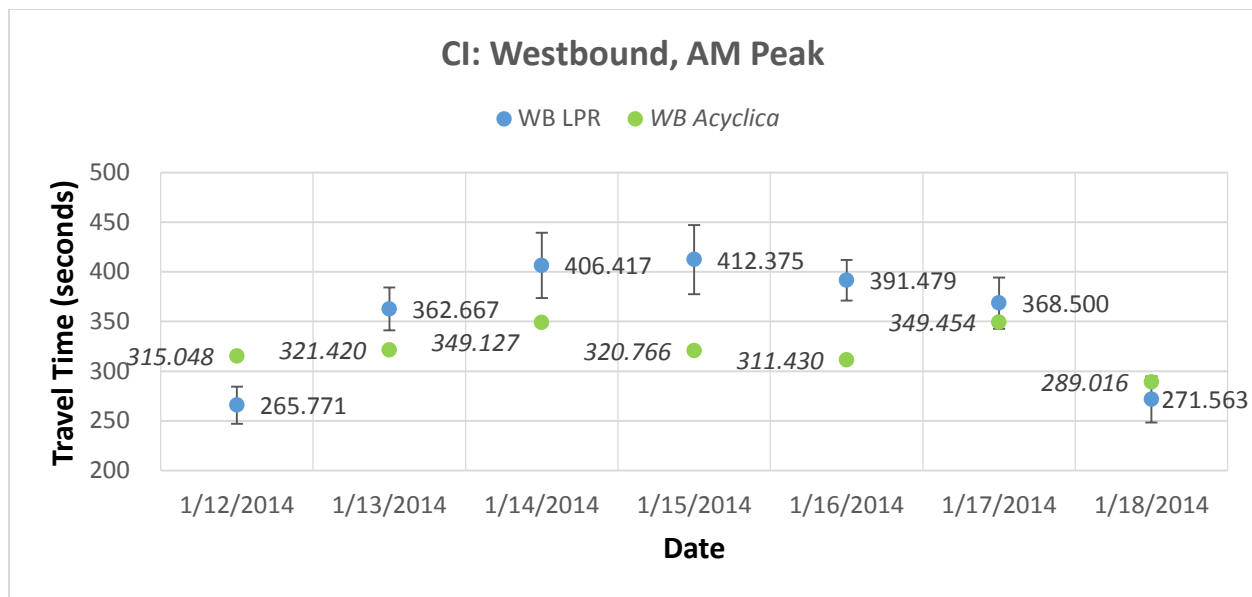
Figure 6. Confidence Interval: Westbound, Morning Peak

Figure 7 presents the LPR confidence intervals and the averaged values of the Cross Compass travel times in the eastbound morning peak period. 5 out of 7 Acyclica data points fell within the LPR confidence intervals. This indicates that Acyclica's data was accurate 71% of the time within a week (5/7 = 0.714).
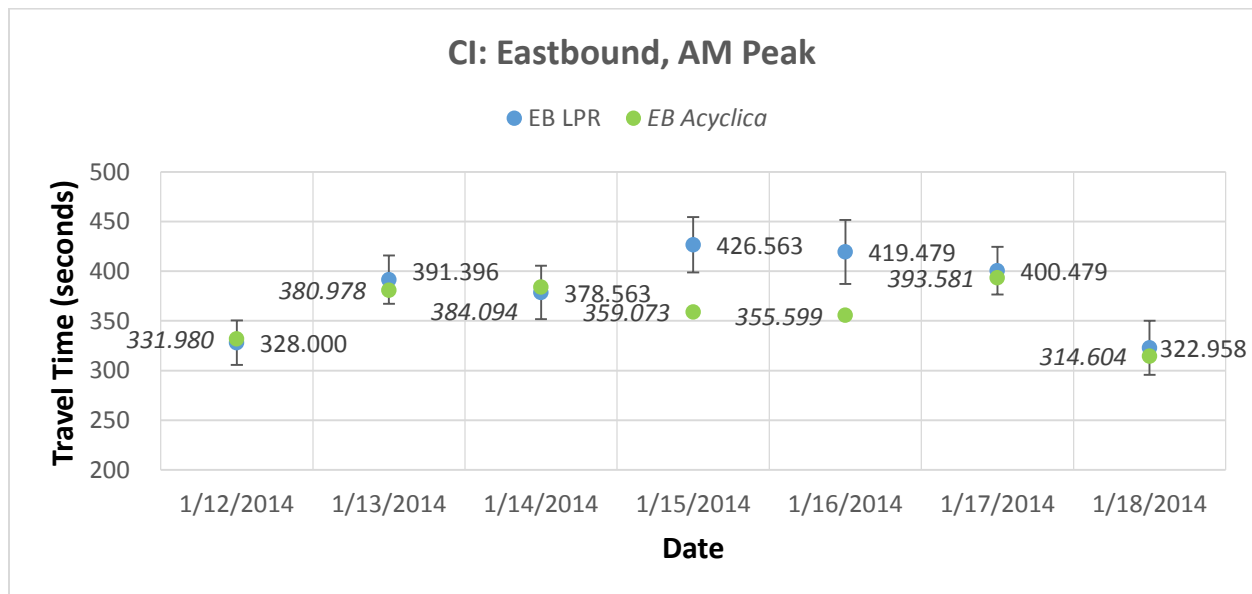
Figure 7. Confidence Interval: Eastbound, Morning Peak

Figure 8 shows the LPR confidence intervals and the averaged values of the Cross Compass travel times in the westbound evening peak period. 0 out of 7 Acyclica data points fell within the LPR confidence intervals. This indicates that Acyclica's data was accurate 0% of the time in a week (0/7 = 0.00).
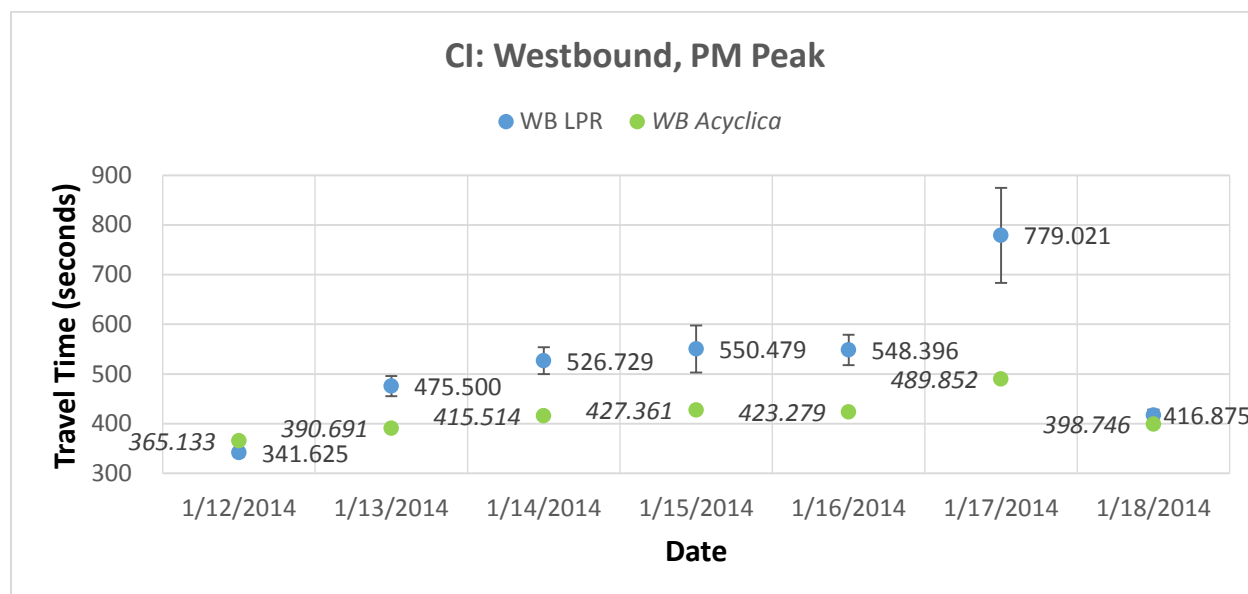
Figure 8. Confidence Interval: Westbound, Evening Peak

Figure 9 displays the LPR confidence intervals and the averaged values of the Cross Compass travel times in the eastbound direction during the evening peak hour. 5 out of 7 Acyclica data points fell into the LPR confidence intervals. This indicates an accuracy of about 71% (5/7 = 0.714).
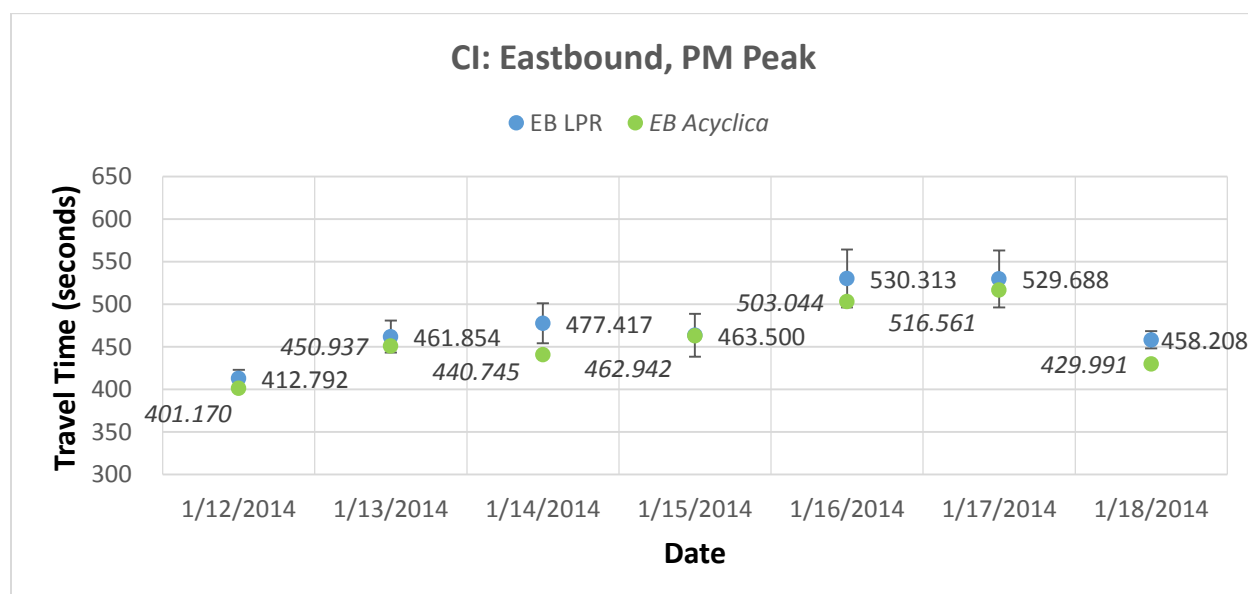
Figure 9. Confidence Interval: Eastbound, Evening Peak

The LPR confidence intervals are calculated and displayed for the four critical periods in a day for the entire study period. The Acyclica travel times were compared to those confidence intervals. Table 9 summarizes the percentage of instances in which Acyclica travel times fell within those intervals.

Table 9. CI Results Summary

Period	Westbound	Eastbound	Average
AM Peak	29%	71%	50%
PM Peak	0%	71%	36%
Average	15%	71%	43%

The results above indicate that Acyclica travel times were more reliable for the eastbound peak period traffic, while Acyclica performed unsatisfactorily for westbound peak period traffic. The general reliability of Acyclica travel times was 43%.

4.2 Reliability

4.2.1 Data Fluctuation

Initial examination of the data indicated that the variances and standard deviations were larger for LPR travel times (Table 2). This was an early indication that LPR data fluctuated more than the WiFi data and that the WiFi data was more consistent. This pointed to a higher reliability for WiFi travel time calculations. A very simple way to confirm this was to plot out the travel times to visually examine the fluctuations over time. Figure 10 compares the travel times of the sensors in the westbound direction and Figure 11 compares them in the eastbound direction.
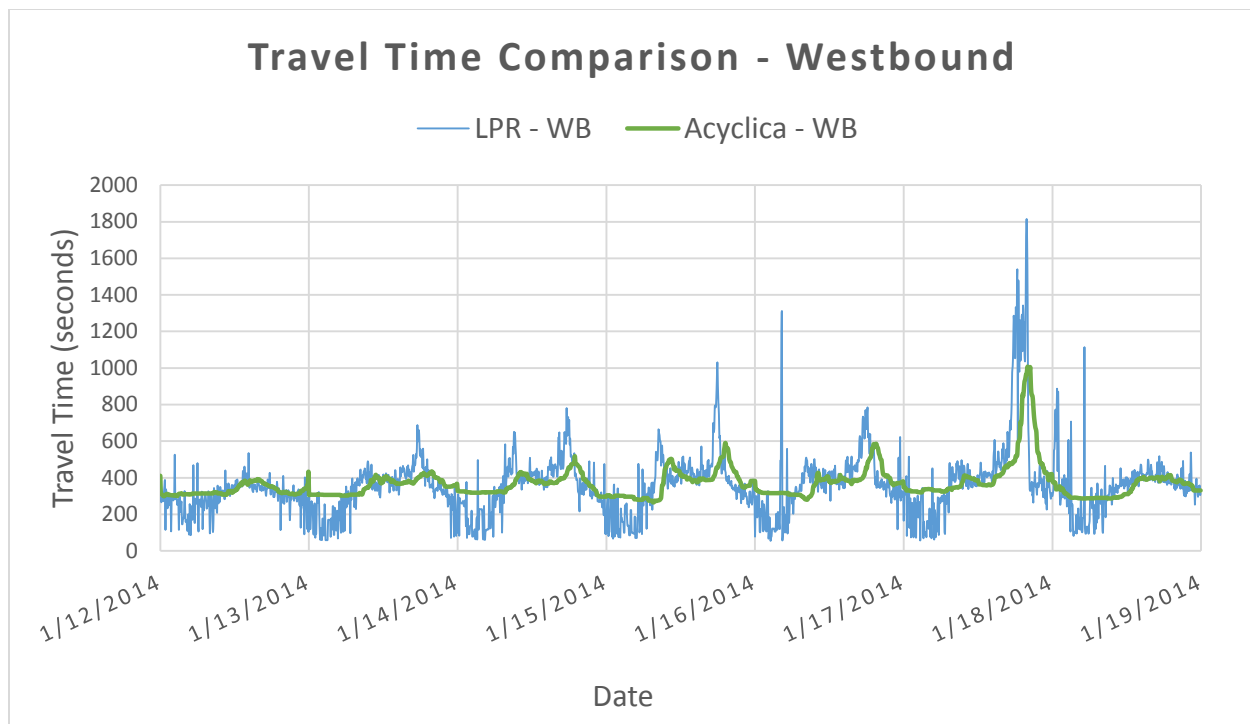
Figure 10. Travel Times WB

As represented in Figure 10, LPR travel times fluctuated greatly. Jagged lines make up the LPR graph, indicating that travel times jumped from one extreme to the next in short time periods. Closer examination revealed that LPR travel times fluctuated in the lower end of the travel time spectrum during the early AM hours. This pointed to the conclusion that LPR had trouble calculating travel times when volumes were low (which is true during early AM hours). Acyclica maintains a flatter plot, which shows that travel times were consistent throughout the day with no major extremes. Both datasets behaved similarly as they were both able to model increases in travel times in the PM peak well. Later on in a day, the graphs spiked up, representing congested conditions. Comparison of the eastbound direction was also completed to see if similar trends occurred (Figure 11).
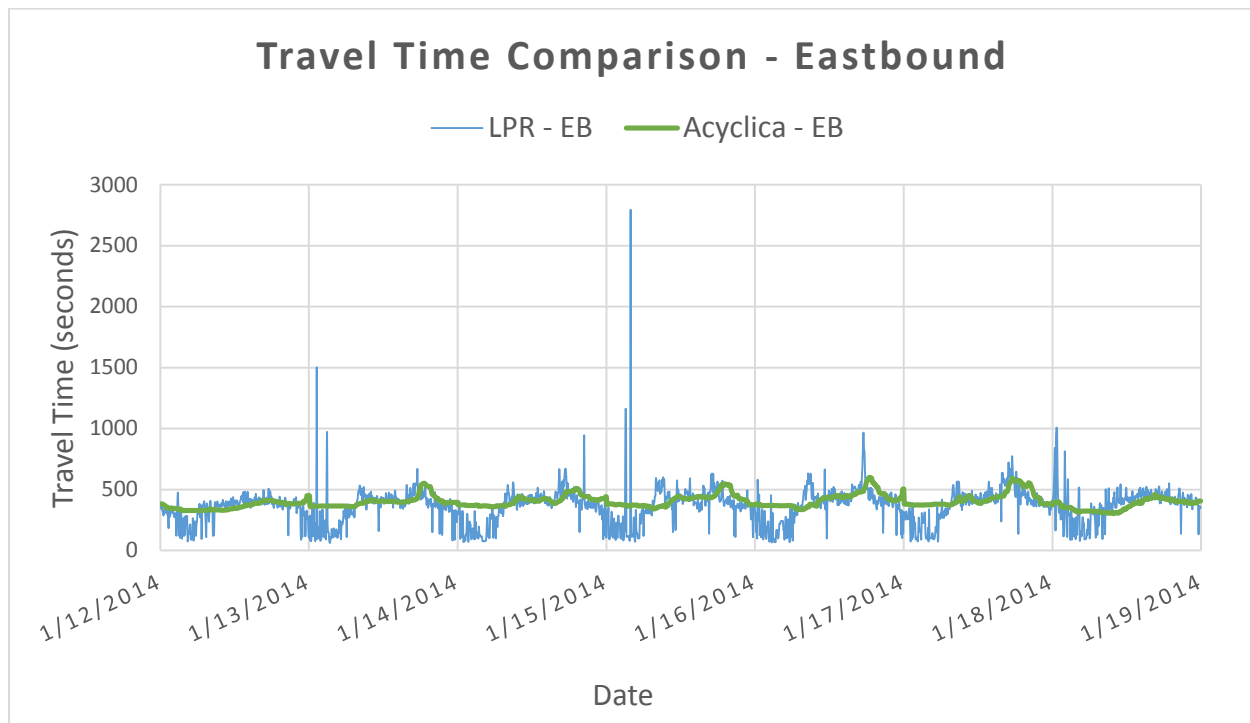
Figure 11. Travel Times EB

The eastbound direction graph shares a similar story to the westbound direction. Both plots are able to model the PM peak well, represented by spikes in travel times later in a day. The AM peak was similar but less extreme in terms of spikes for both systems. LPR data has major upper extreme spikes, which all occur in the early AM hours. This further reinforces the theory that LPR performs poorly during early hours and/or low volumes.

4.2.2 Match Rates

In traffic detection systems, match rates are an important measure of effectiveness. The match rate represents the detector's ability to capture data based on the total volume of vehicles passing by. In this analysis, the match rate was defined as the percentage of matched readings/vehicles between two sensors out of the total number of captured data at each sensor. The formula used for calculating match rates was as follows:

$$Match\ Rate = \frac{Total\ matches\ between\ sensors\ A\ \&\ B}{Total\ captures\ of\ sensors\ A + B}$$

In the case of SDOT's LPR detection system, a match was defined as the instance when a license plate number that was captured at sensor "A" (upstream), was captured again at sensor "B" (downstream). Each sensor captures a certain amount of license plate numbers, but not every

vehicle will venture down Denny Way to the next sensor. Travel times are only calculated when a match is found.

In the case of Acyclica's WiFi & Bluetooth detection system, a match was defined as the instance when a MAC address was captured at both the upstream and downstream sensor. The match rate was then calculated by obtaining the total matches between the two sensors, and dividing by the total captures of those two sensors. Match rates were calculated for both systems for each segment and each direction of Denny Way. The results visualized in Figure 12 and Figure 13 show the LPR match rates, and Figure 14 and Figure 15 display the Cross Compass match rates.

As mentioned previously in the Data Source section of this report, the locations of the detectors of the two systems did not precisely match up. The second LPR detector was located at Denny & Dexter, while the second WiFi & Bluetooth detector was located at Denny & Aurora. This was a difference of one block that spanned approximately 267 feet. For the purposes of this analysis, the difference in location was neglected for the following reasons:

- The locations of the detectors had been implemented prior to this study and could not be moved
- The majority of the analysis was based on the entire corridor, which started and ended at the same locations. Differences in segments in between would not have had a significant impact on the entire corridor travel time.
- The difference was minor enough that it and would not affect the overall conclusion of this analysis
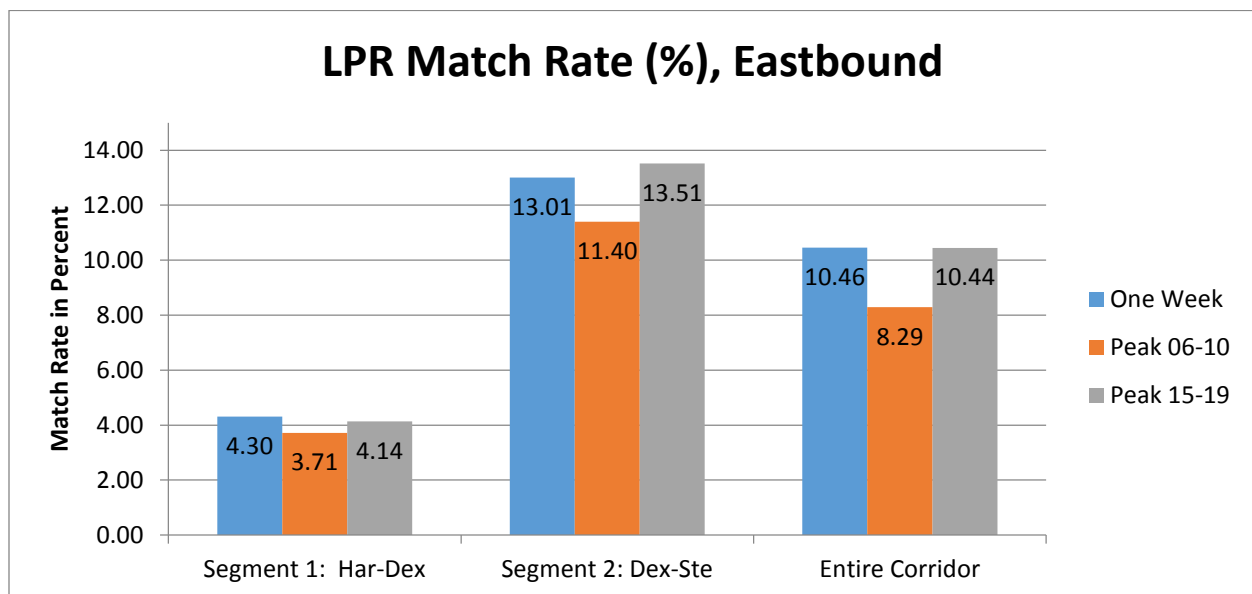
Figure 12. LPR Eastbound Match Rates

Figure 12 shows that the LPR match rate was considerably higher in the second segment. This could be due to the fact that vehicles detected upstream weren't necessary intending on traveling eastbound on the entirety of Denny Way. Many vehicles may have been traveling from the northern direction and heading southbound, then dispersing into the various downtown destinations. It made sense that segment 2 had higher overall match rates because vehicles that had traveled that far eastbound on Denny Way were likely heading towards the I-5 on ramps. Similar destinations could lead to higher match rates. The same comparison was completed in the westbound direction (Figure 13).
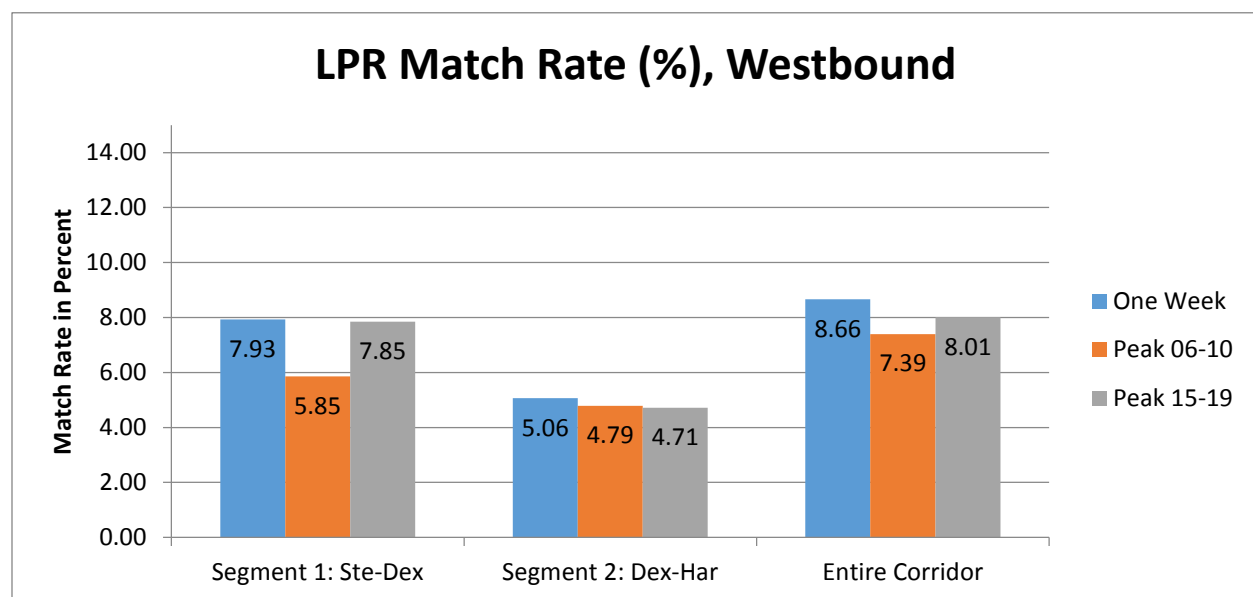
Figure 13. LPR Westbound Match Rates

Figure 13 (westbound) tells a similar story compared to Figure 12 (eastbound). This time, segment 1 has higher overall match rates compared to segment 2. Overall match rates decreased across the board. This makes sense because drivers traveling eastbound on Denny were likely attempting to get on I-5. Drivers traveling westbound had more variety in possible major routes such as taking SR-99, 15th Ave, or the Alaskan Way Viaduct. Segment 1 was higher, likely because many drivers were coming off of I-5 and were initially using the same route on Denny to reach different destinations. Once segment 2 had been reached, many of those travelers had dispersed onto different routes. Next, match rates were analyzed for Acyclica's WiFi & Bluetooth sensors in the eastbound direction (Figure 14).
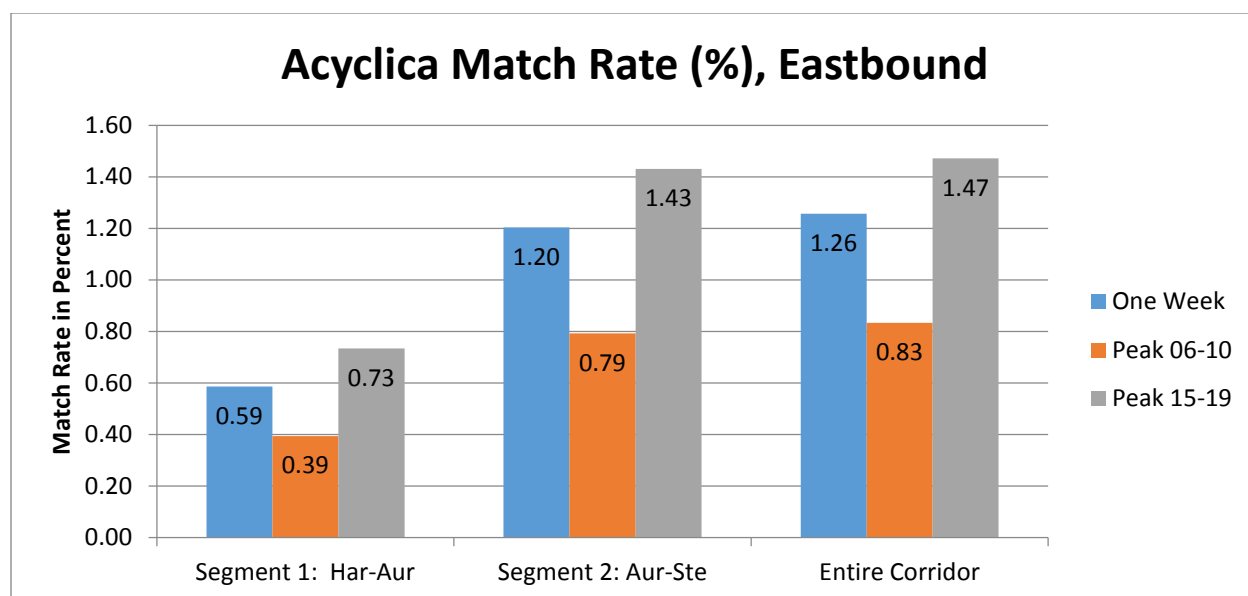
Figure 14. WiFi Eastbound Match Rates

In terms of matching behavior, Acyclica's sensors followed a similar trend compared to LPR: Lower segment 1 match rates and higher segment 2 match rates in the eastbound direction. The main difference was the drastic disparity in values. Examination of the opposite direction was implemented to see if similar results occurred (Figure 15).
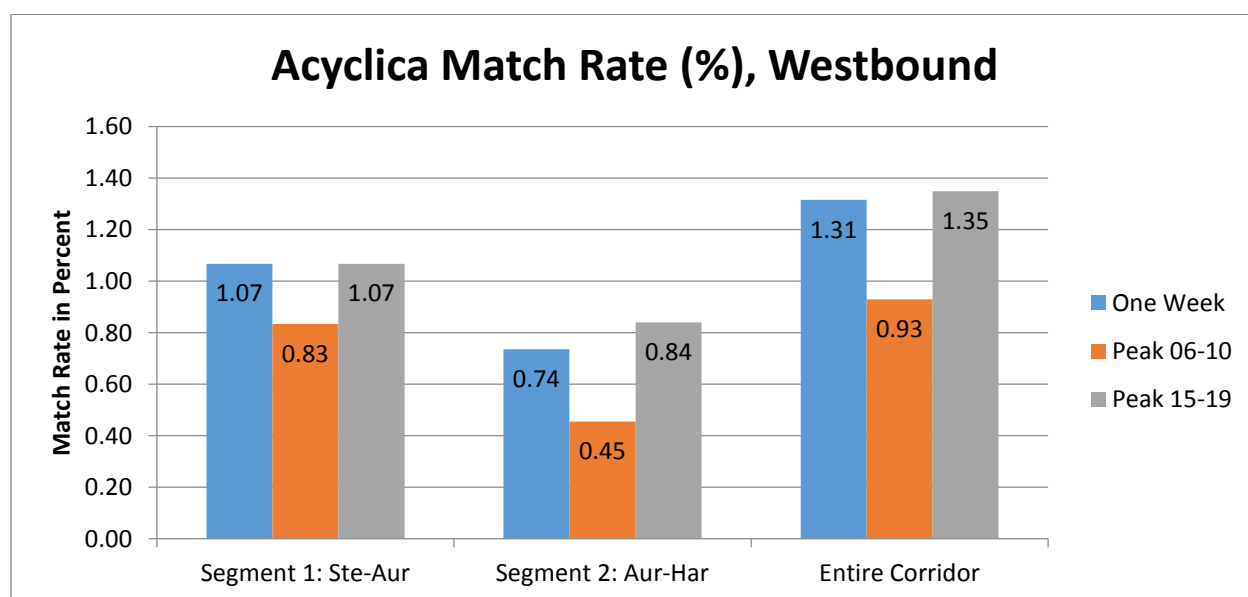
Figure 15. WiFi Westbound Match Rates

Examination of the match rate figures revealed that LPR had significantly higher match rate values in all scenarios. LPR match rates ranged from 3.7% to 13.5%. Acyclica's Cross Compass

on the other hand, had match rates ranging from 0.4% to 1.5%. The differences were drastic; the highest Cross Compass match rates did not come close to LPR's lowest match rates.

However, this does not directly indicate that Acyclica was inefficient at obtaining high volumes of travel time readings. The difference in technology was the main reason for the major discrepancies in results. LPR detectors collected license plate numbers and each number corresponded to one vehicle. The Cross Compass collected WiFi MAC addresses (for this study), which could've corresponded to any type of WiFi enabled devices. A vehicle could've had any number of these devices. The existence of passengers, pedestrians, bicyclists, and others with WiFi enabled devices also could've had an impact. In short, the Cross Compass captured much higher volumes of data from many different sources that may have not corresponded to a single vehicle. It was up to Acyclica's filtering algorithm to find the match that most likely corresponded to a single vehicle. Table 10 shows the raw differences in the collected data.

Table 10. Captures Comparison

Time Period	SDOT LPR		Acyclica Cross Compass	
	Westbound	Eastbound	Westbound	Eastbound
One Week	229,854	226,947	476,309	450,888
Peak 06-10	39,116	46,784	86,593	85,645
Peak 15-19	64,726	58,734	112,549	106,891

The table shows that for an entire week, the Cross Compass captured approximately twice as much data. This partially explained why Acyclica match rates were so low compared to LPR. However, this didn't proportionally correlate to the radical differences in match rates. The LPR match rates were more than two times larger than the Acyclica match rate values. The total matches were then examined to explore this further.

4.2.3 Total Matches

Due to the differences in technology and data capturing techniques, total matches were examined to compliment the match rate comparisons. Total matches are simply the total numbers of vehicles matched between two sensors. This eliminated the number of captured data at each sensor, which differed significantly between the two systems. This made for a more impartial comparison between the two systems. Figure 3 shows the total matches comparison for the entire eastbound corridor. The comparison was made for the entire study period, the morning peak period, and the afternoon peak period.
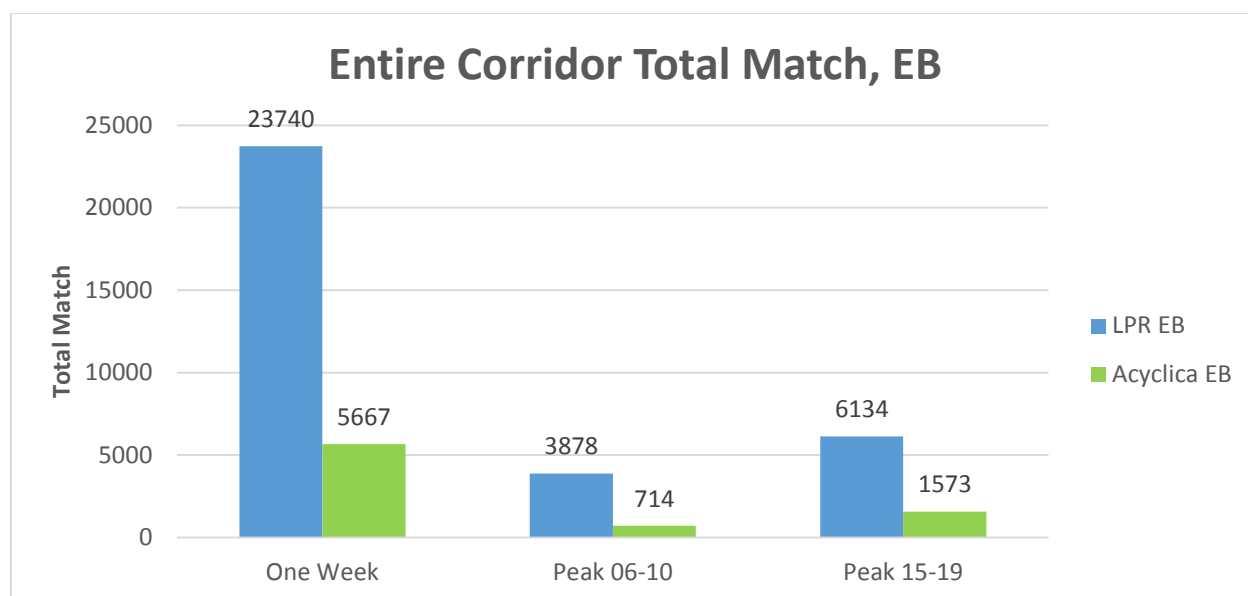
Figure 16. Total Matches EB

Even with the total captures taken out of the equation, SDOT's LPR system still edged out Acyclica's Cross Compass by a significant margin. To get a better idea of how significant the difference was, refer to Table 11, which shows the proportion of the Cross Compass matches to LPR as a percentage.

Table 11. Acyclica EB Total Match Comparison

Time Period	Percentage of LPR Matches
One Week	23.87
AM Peak	18.41
PM Peak	25.64

From Figure 16 and Table 11, it becomes evident that the LPR system is much more proficient at capturing matches in terms of sheer numbers.

The westbound direction was also compared in the same fashion. Figure 17 shows the total match counts for the entire westbound corridor from both LPRs and Cross Compasses. The comparison was made for the entire study period, the morning peak period, and the afternoon peak period.

Entire Corridor Total Match, WB
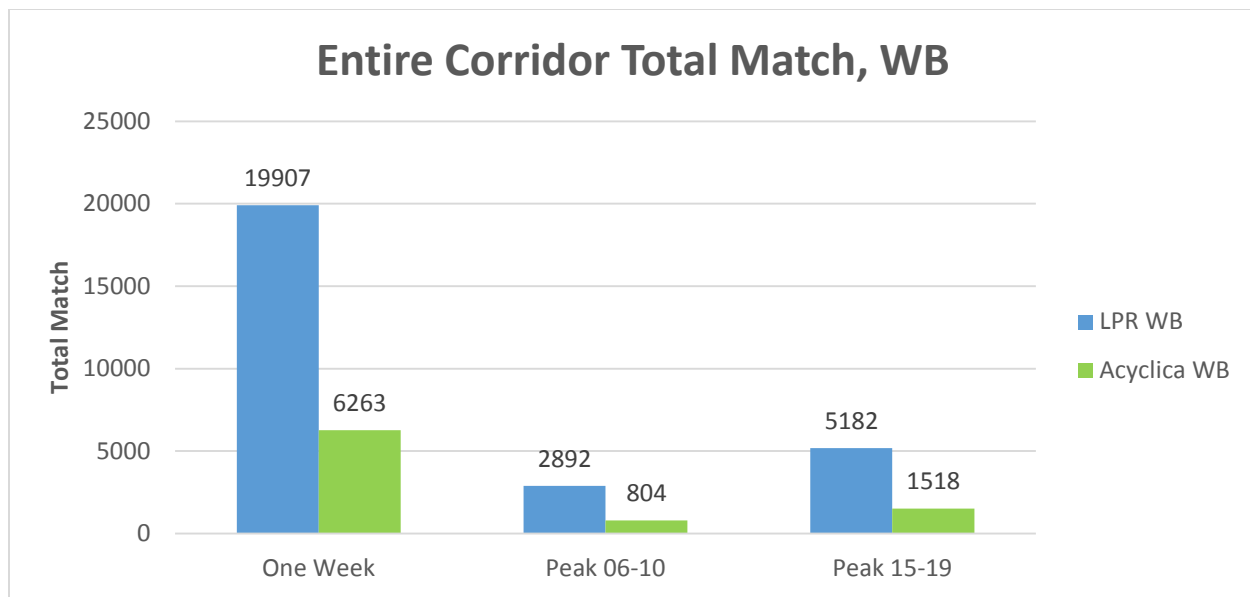
Figure 17. Total Matches WB

The story was the same in the westbound direction. LPR matches were drastically larger in sheer numbers. The proportions of the Cross Compass matches to LPR matches are displayed in Table 12.

Table 12. Acyclica WB Total Match Comparison

Time Period	Percentage of LPR Matches
One Week	31.46
AM Peak	27.80
PM Peak	29.29

Based on the graphs and tables, Acyclica's Cross Compass system performed better in the westbound direction. The system was able to acquire more total matches and a larger proportion of the LPR matches.

4.2.4 PDF

The PDF or probability density function provides the likelihood of a given value occurring. In this case, the values of concern are travel times. For the PDF graphs, the x-axis represents the travel times and the y-axis corresponds to the probability of that travel time occurring in a decimal format. Since the travel times had a very wide range, the corresponding y-values are notably small since the odds of a specific travel time occurring diminishes with a larger range. This means that a more compact graph was more desirable in terms of reliability. A more compact graph indicated that travel times in that graph had a higher probability of occurring, which was an indication of a more preferable reliability. The cumulative probability of all of the travel times occurring is 1, which is the total area under the PDF curve. A total of four PDF graphs are plotted for the eastbound/westbound LPR and Cross Compass data. These four graphs are shown below (Figure 18).
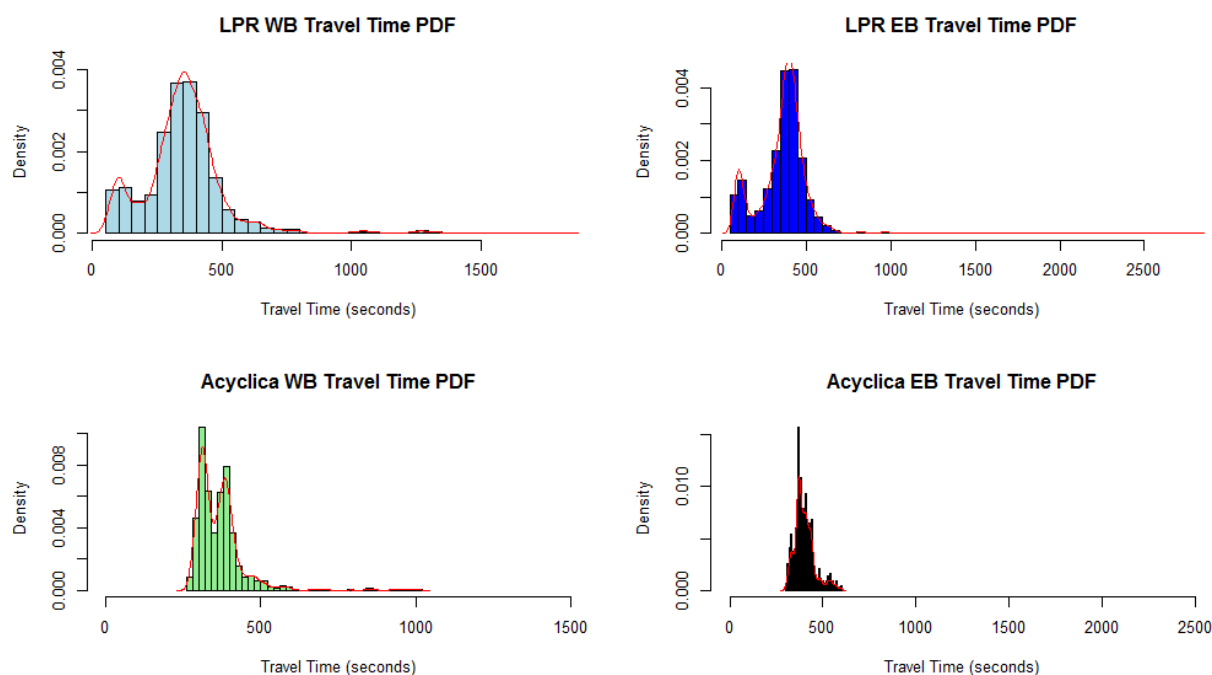
Figure 18. PDF Graph Comparisons

The x-axes for each direction were made equivalent to show the spread of data with biases removed. For both directions, Acyclica has the more compact graphs. This indicates that there is a higher probability of certain Acyclica travel times occurring compared to LPR travel times. Acyclica has more consistent output, and therefore has a higher reliability according to these graphs.

4.2.5 CDF

The CDF or cumulative distribution function provides the likelihood of a given value and all values below it. For the CDF graphs, the x-axis displays the travel times and the y-axis corresponds to the probability of that travel time and all travel times beneath it. For example, in the case of the SDOT LPR westbound data, the CDF value corresponding to 1815.0 (the maximum value) was 1 because the likelihood of a travel time being at or below that value was 100%. A CDF graph can also be created by plotting the area under the PDF curve across the x-axis. Since a more compact PDF graph indicates higher reliability, a steeper CDF graph indicates the same. If a PDF graph was compact, plotting the area underneath it to create a CDF graph would result in a steeper graph compared to a not as compact PDF graph. Two CDF graphs are plotted for the eastbound/westbound LPR and Cross Compass data during the entire study period. The two graphs are shown below in Figure 19.
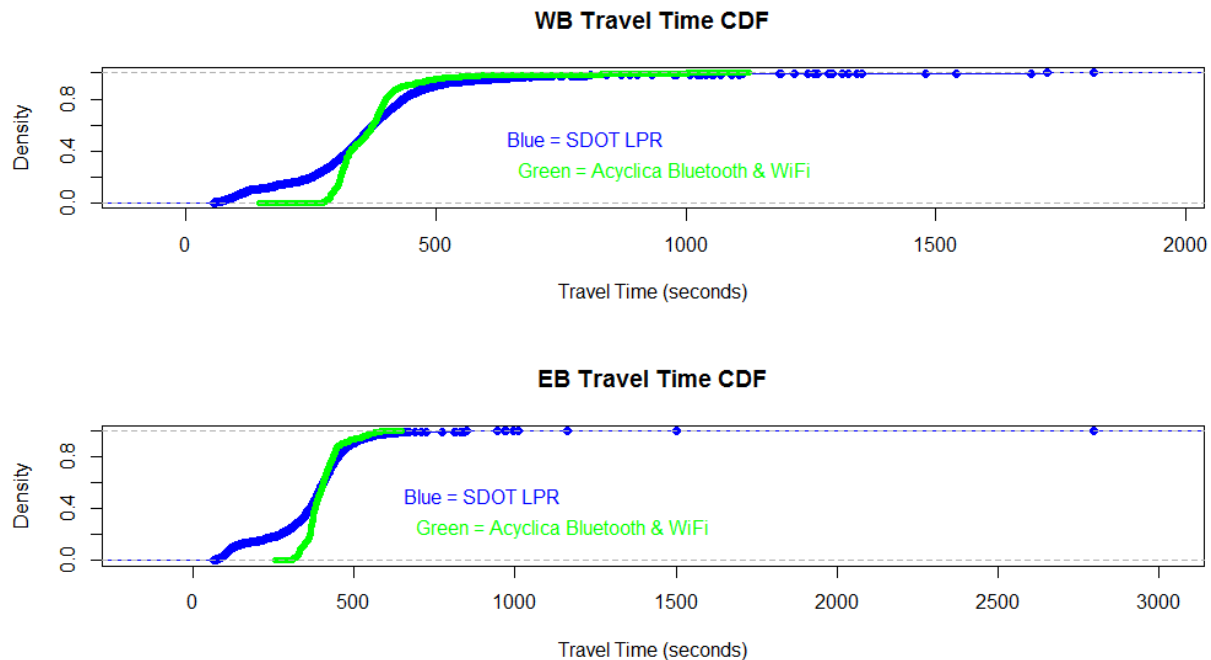
Figure 19. Study Period CDF Comparison

Examination of the study period CDF graphs results in the same conclusion as the PDF graphs. Both westbound and eastbound directions show that Acyclica's Cross Compass has steeper CDF graphs. The reliability is closer in the eastbound direction as the steepness is marginally different between the two systems.

Overall, the Cross Compass is more reliable up to a point. The most important time periods are the AM and PM peak hours. The overall reliability may be different than the reliability during these critical time frames. For this reason, AM and PM peak CDF graphs are also plotted to determine if the overall reliability results translate to these timespans.

The PM peak hours were especially important because this was the time frame in which commuters were traveling back home from work. In this time period, traffic tends to increase greatly and travel time readings need to be reliable. The PDF graphs for the PM peak period provided a clearer picture of reliability between the two systems during this crucial period. The plots for each direction are displayed in Figure 20.
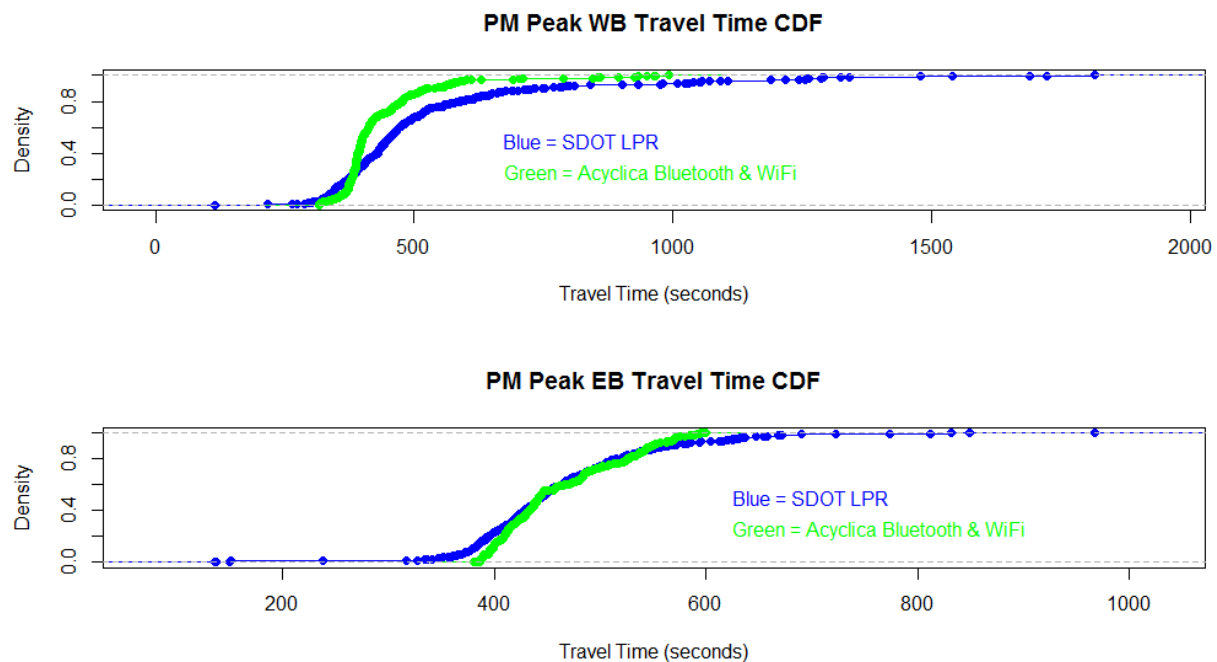
Figure 20. PM Peak CDF Comparison

The PM peak CDF graphs show results that are very similar to the overall CDF graphs. Acyclica's Cross Compass was more reliability in both directions during this time period as well. The eastbound direction is almost indistinguishable in terms of steepness. In those occurrences, it could be easier to examine which each graph reached a density of 1 first. This is because the first graph to reach 1 is the graph with less variability in travel times. In higher reliability graphs, it takes fewer different travel time readings to reach a 100% cumulative distribution. Another way to measure this was to observe the width of each graph. The wider the graph, the more varying travel times each system had to reach 100%.

The CDF results for AM Peak hours are shown in the graphs displayed in Figure 21.
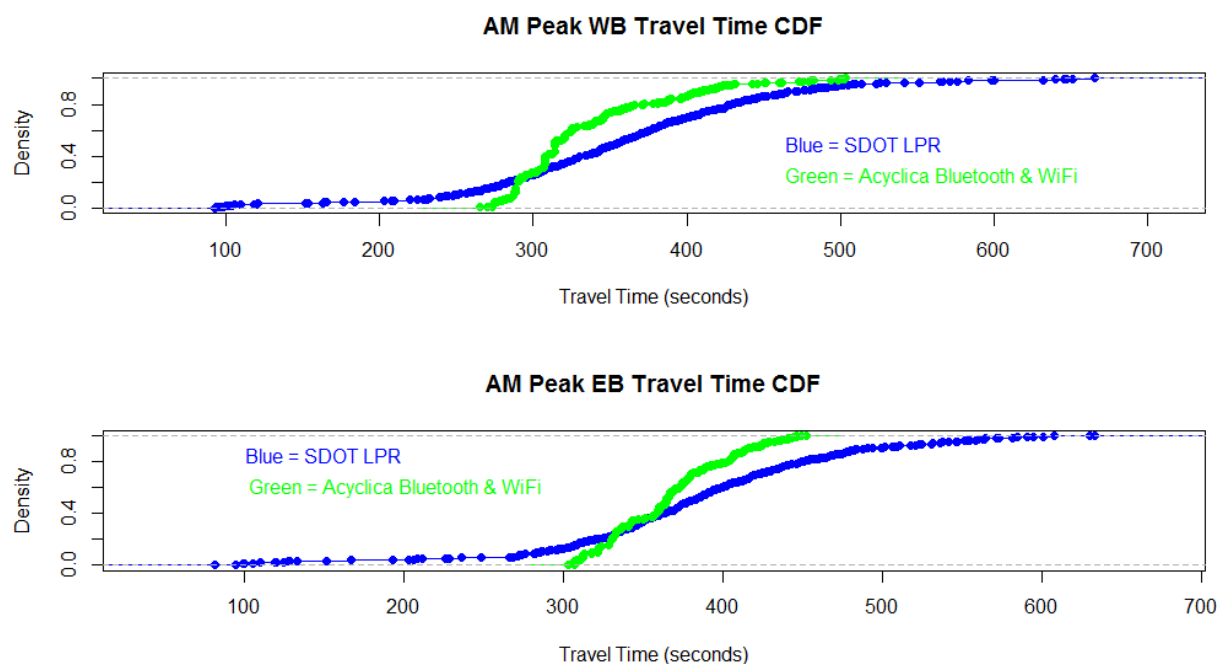

Figure 21. AM Peak CDF Comparison

In terms of steepness, the graphs vary as travel time increases. Overall, the Acyclica Cross Compass graphs are steeper and reach 100% prior to the SDOT LPR graphs.

For all of the CDFs shown, the Acyclica Cross Compass data is steeper in both eastbound and westbound directions. This indicates that the data is more consistent and there is less variability when compared to the SDOT LPRs. It should be noted that all CDFs graphs were created after the removal of zeroes from the LPR data (Acyclica had zeroes automatically removed prior to analysis). Therefore, whichever system had more zero readings to begin with could've gotten a substantial advantage in terms of reduced variance from this removal process. When considering AM/PM peak hours, the number of zeroes is minimal for LPR. Therefore, the impact on variance was minimal when those zeroes were replaced in the LPR dataset.

5.0 Conclusions

5.1 Accuracy

In this report, there were nine different comparisons/tests performed to gauge the accuracy of Acyclica's Cross Compass system to SDOT's LPR system. These tests assumed that SDOT's LPRs were the ground truth. Based on this assumption, Acyclica's accuracy was tested.

Acyclica did not pass the t-test because the results showed that the means were not the same. This showed that Cross Compass was unable to produce similar values to LPR in terms of the mean. The correlation and covariance tests showed that the behavior of the datasets were similar. The MAPE and MAE tests revealed that Acyclica's travel times (on average) differed from LPR travel times by approximately 1.5 minutes. In the AM peak MAE comparison, the differences increased to approximately 3 minutes. Examination of the PM peak showed that differences reached up to 6 - 7 minutes during the busiest times of the PM peak. This difference was drastic, but questionable as this only occurred in the westbound direction in that peak period. The results in the other direction and other periods are different. The confidence interval comparisons in the AM peak showed Acyclica was able to produce travel times within most of the confidence intervals in eastbound direction. The opposite was true for the westbound direction. However, in the PM peak period, Acyclica did not fare too well in the westbound direction (again). This may be an indication that something went wrong with the LPR system during that time period.

5.2 Reliability

To gauge the reliability of Acyclica's Cross Compass system, a total of six tests/comparisons were performed. These tests also assumed that SDOT's LPR system was the ground truth. Acyclica's reliability performance was tested based on this assumption.

In five out of the six tests, Acyclica's Cross Compass performed well. In terms of variance and data fluctuation, Acyclica's Cross Compass had lower variance values, as well as less visible data fluctuation in the travel time plots. Both of these showed that the Cross Compass produced more reliable and consistent travel times. The PDF graphs of Acyclica were more compact, indicating higher reliability compared to SDOT's LPRs. The Cross Compass's study period CDF graphs were steeper compared to LPR and this also indicated higher reliability. The results of that test remained consistent in the AM and PM peak as well. Total matches replaced match rates as a measure of effectiveness because match rates assumed that the two systems captured the same type of data. This discrepancy in technology and data collection made match rates an unfair comparison. However, Acyclica had miniscule total matches compared to SDOT. This was consistent for the entire week, the AM peak, and the PM peak periods.

5.3 Overall

In terms of accuracy, Acyclica did not perform as well as desired. However, the majority of the problems occurred during the PM peak period in the westbound direction. Acyclica's Cross Compass performed comparably to LPR in terms of accuracy in all other cases. This leads to the question of whether the LPR dataset should really be considered the ground truth, or whether LPR performed as it should have in the westbound direction during the PM peak. The reliability tests told a different story, where the Cross Compass performed remarkably well. Acyclica's Cross Compass was able to produce consistent travel time readings, while LPR data was more scattered and erratic. Overall, as far as accuracy is concerned, Acyclica's Cross Compass has the potential to perform just as well as the LPRs; in terms of reliability, Cross Compass is the more capable system.

6.0 References

1. (2013, June 19). *Travel Time on Arterials and Rural Highways: State-of-the-Practice Synthesis on Arterial Data Collection Technology* [Online]. Available: http://www.ops.fhwa.dot.gov/publications/fhwahop13028/ch2.htm
2. (2013). *CCTV, Video Surveillance Systems in Statesboro, Georgia* [Online]. Available: http://team-bts.com/cctv-video-surveillance-systems/southeast-georgia/bulloch-county/statesboro/
3. Sterling, Greg. (2013, June 5). *Pew: 61% In US Now Have Smartphones* [Online]. Available: http://marketingland.com/pew-61-percent-in-us-now-have-smartphones-46966
4. (2013, May 1). *Cross Compass by Acyclica* [Online] Available: http://www.acyclica.com/?p=190
5. (2014). *Acyclica Analyzer* [Online]. Available: http://cr.acyclica.com

City of Seattle
Edward B. Murray, Mayor

Department of Transportation
Scott Kubly, Director

MEMORANDUM

Date: **4/20/2015**

To: **Daniel Benhammou**

From: **Seattle Department of Transportation**

Subject: **Request for Acyclica to Obtain Third-Party Security Assurance**

In Seattle, our Mayor and Council took a strong stand on privacy by requiring we inform the public of our data collection practices when possible and seek to mitigate privacy risks.

In response, we ask that Acyclica obtain third party assurance from a licensed audit or security firm that the company's controls implemented to protect the privacy of individuals' data captured by their devices is maintained. This assessment should be performed in accordance with the AICPA AT-101 Attest engagement standard. Acyclica should consult with an audit firm of their choice to see if an existing audit standard is sufficient (e.g. SOC2 Privacy), or if a custom agreed-upon procedures assessment is necessary. We request a copy of the auditor's opinion and report, and will make this public as part of our privacy assessment of the traffic management program.

Our objective is to help gain the public's trust that, while we collect some data as part of the traffic management program, that data cannot be used to uniquely identify an individual, we cannot search for a known individual, there is no utility to the data other than understanding traffic at an aggregate level, the data is protected at all times and never maintained in an unencrypted/unhashed state, and the data provides no value to law enforcement or third parties.

We ask Acyclica expediently pursue an assessment as we need to communicate this program to the public by June, and we need to provide third party assurance to the public at that time.

Additionally, we suggest several improvements to Acyclica's control environment:
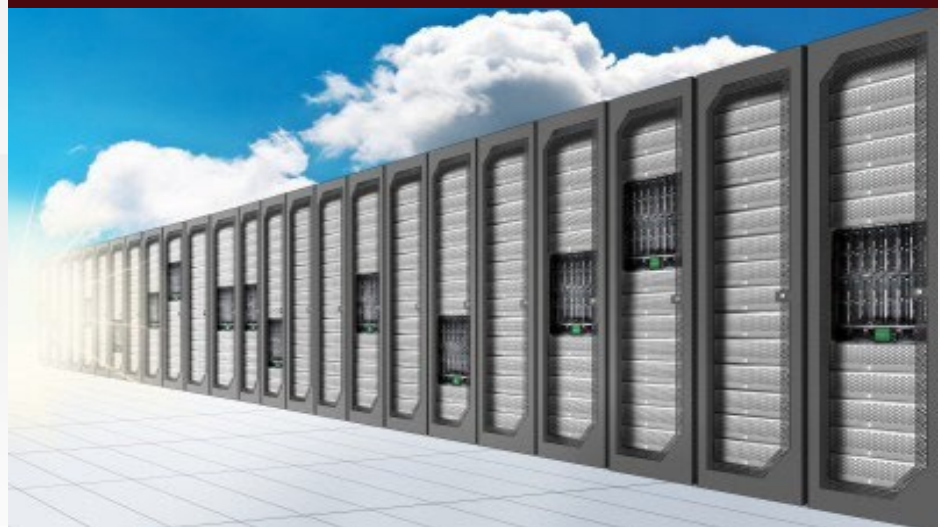
- Enhance their key management program to reduce the risk that the exposure of a single key would compromise all of their customer data.
- Delete detail-level data after a period of time (e.g. 90 days). Aggregated data can be maintained to understand traffic patterns and historical information. Detail-level data likely has minimal value especially as hashing methodologies are changed daily, when prevents the comparison of detailed records across days.
- Do not share a city's data without express permission from the owning city.

Acyclica White Paper:
RoadTrend does not Capture PII

Submitted to:
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Date
December 18, 2015

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Intro

Acyclica is the leading provider of high resolution, real-time traffic congestion information. They are the fastest growing ITS company providing congestion management solutions. Its suite of traffic analytics software and sensor devices are currently being used by over 50 agencies both domestic and international to help to monitor and improve traffic congestion. Acyclica works with cities, municipalities and Departments of Transportation to aggregate and analyze data to bridge gaps in traditional traffic data services. Acyclica also provides data to organizations and businesses in need of relevant travel information services ranging from origin and destination information to travel-times.

Based on the data Acyclica captures, their customers/client then have information that can be provided to travelers and traffic engineers, such as a calculated average speed for different monitored roadway segments, duration of traffic/turn signals, and average progress time along different monitored roadway segments, representative of travel and stop time and delays. This then allows traffic engineers to correct traffic signal length, set sensors and traffic lights to be shorter/longer, and provide information to travelers about traffic signals or other pertinent information around delays.

Applications of Acyclica technology include: Signal Timing & Coordination, Traffic network optimization, Street parking congestion analysis, Congestion mapping, Route planning, Workzone congestion enforcement, Variable message signs, Incident Detection, Emergency responder routing and Route Utilization.

Acyclica technology anonymously collects media access control (MAC) address information and send the data to the cloud using WiFi technology through the use of their RoadTrend Sensor. This sensor is a proprietary Linux-based device that is discreetly installed inside of traffic control cabinets for their clients/customers. The devices are Ethernet connected and have a WiFi adapter capturing the MAC addresses of all devices within its range. Based upon the design and configuration, Acyclica believes that they are able to be exponentially more accurate, capturing several hundred times more data than normal mobile apps or traffic pattern analyzers.

Using WiFi detection of MAC addresses, Acyclica is able to identify and differentiate vehicle movement as it approaches, stops and leaves an intersection. From the aggregated data, Acyclica is able to extract and provide actionable information to their clients/customers to make informed choices on the traffic service enhancements and resolution of traveler challenges.

Summary/Intended Message

Acyclica technology anonymously collects media access control (MAC) address information and send the data to the cloud using WiFi technology through the use of their RoadTrend Sensor. Using WiFi detection of MAC addresses, Acyclica is able to identify and differentiate vehicle movement as it approaches, stops and leaves an intersection.

MAC address is a media access control address which uniquely identifies a device connected to a network. MAC addresses are usually assigned by a manufacturer and the information is hard-coded to the device and stored in its hardware. MAC addresses are independent of device ownership such that there is no immediate connection

to the device owner/user. A MAC address thus does not represent any personally identifiable information (PII). If device ownership changes, the device MAC address remains unchanged. Within the product and services provided by Acyclica, the applicable device is a mobile device. The only way to connect a MAC address to the mobile device owner/user is to work with a mobile carrier to associate the MAC address to an active mobile phone number listed on mobile customer's account. In this case, the PII resides with the mobile carrier who maintains the details of a mobile customer's account.

Even though this information is not PII, since it not inherently tied to an individual mobile device owner/user, Acyclica still does protect the data using encryption technology embedded within proprietary code that secures the non-PII MAC address at the device prior to transmission to the Acyclica's backend infrastructure for analysis. Other methods of securing the non PII data include specific design and configuration of the backend infrastructure components, as well as industry standard security practices for access controls and logging/monitoring and alerting.

Acyclica's clients/customers are agencies both domestic and international, including cities, municipalities and Departments of Transportation. Depending upon the contracted service(s), these clients/customers may have access to the aggregated data through a web portal. Since no PII is captured, there is no PII shared with Acyclica's clients/customers through this portal. However, Acyclica still does protect the data using encryption technology for data encryption across the internet providing an encrypted web portal using a third party encryption certificate.

Question/Concern

What information does Acyclica collect? Is this information PII?

Mobile device MAC address data is collected by Acyclica for their analytics, however there is no PII captured that could identify an individual mobile device owner/user, such as name or mobile device number. The captured MAC address cannot be tied to an individual mobile device owner/user unless done so by the mobile carrier, which is outside of the purview of Acyclica.

Mobile device MAC address data collected by Acyclica and provided to their customers/clients is very minimal, and includes only a hashed value of the MAC address (never a full, unhashed version), in addition to timestamp, strength (of signal) and serial number (of sensor device). This information is provided to the customer/client by way of an access controlled web portal, which can also permit an export to csv. And API is also made available for customers/clients to integrate the data into digital signage for real-time communication to travelers in determined areas.

Why is it important to protect the non-PII data that is collected?

While not PII, if data from a mobile carrier were to be made available, by means either accidental or nefarious, a third party may be able to correlate the data and use the analysis to track the movements and activities of the mobile device owner/user. In these cases, the movements and activities of the mobile device owner/user could reveal addresses of personal residence or workplace, as well as those dates and times when the mobile device

owner/user was regularly present or absent at either location. The likelihood of this occurrence can vary and there are many other variables that contribute to the overall level of risk.

How does Acyclica secure the collected non-PII data?

Regardless of risk likelihood and level, Acyclica employs industry-standard measures to secure the data itself as it is captured at the device, retained in the backend infrastructure components and made available to the customer/client, as well as during data transmission from the device to the backend infrastructure components and the presentation of the data in a web portal. Acyclica ensures also that there are configuration standards and industry-accepted hardening criteria incorporated into the design and implementation of their sensor devices and backend infrastructure components, as well security practices that enforce strong access controls, configuration management procedures and methods of being aware of the state of the systems at all times.

Specifically, the following security measures are in place to secure the non-PII MAC address:
1. Limited data capture of MAC address
   - The intended design of the sensor devices limits the collection of MAC address data based upon the signal strength that is broadcasted to the WiFi antenna within the designated traffic cabinets range (500-700 feet). This means that there is a focused effort to only capture data within the predetermined range which will provide the most relevant data.

2. Encryption technology at device prior to transmission
   - Acyclica has created proprietary code that incorporates encryption technology using industry standard algorithm and cipher strengths, as well as inclusion of the use of a cryptographic hash function with a generated salt value. A cryptographic hash function is a way to easily validate that a string of data corresponds to a specific hash value. If the original data string is unknown, but the stored hash value is known, by design, the cryptographic hash function makes it challenging to recreate the original data string. Utilization of hash function is intended to assure the integrity of data in transmission. In cryptography, a salt is random piece of data that is used, in addition to a string of data, in the creation of a hash value through use of a hash function.
   - The primary function of salts is to prevent retro calculation of the hashed value if the hash function is known. Use of a salt precludes the effectiveness of using a list of possible pre-computed values since the salt is randomly generated. With Acyclica's proprietary technology solutions, the salt rotates every 24 hours on the actual sensor device. The salt value is determined by timestamp which enables the hash to be dynamic. This encryption methodology is in sync with industry standard protocols. Additionally, there is proprietary code that is running on the sensor device that performs the encryption function. The proprietary nature of the code strengthens to nature of the encryption methodology. The methodology of transmission to the cloud is a direct post to the back end systems, versus an HTTPS transmission or broadcast over open, public networks which is considered less secure.

3. Secure transmission to Acyclica's backend environment –
   - Acyclica avoids the use of HTTPS transmission or broadcast of data over open, public networks.

4. Encryption technology in the backend environment –
   - [More information is needed here if it is to be included]

5. Database schema design and repository in AWS environment –
    - Information such as address, name, race and gender is not captured, only MAC address. All other data capture corresponds to needed data which would be publically available and which is relevant specifically for traffic analysis.

6. Secure presentation to customers/clients in an encrypted (HTTPS) web portal –
    - The web portal (https://cr.acyclica.com) uses industry-accepted encryption by way of a third-party certificate.

7. Secure configuration and hardening of device –
    - Acyclica uses of a pared down proprietary Linux installation with a specific embedded processor, chosen for processing optimization. Minimal storage is available on this device to enable only intended functionality and to also limit data retained. Additionally, there are specific access controls set to ensure restricted logical access to the device.

8. Secure configuration and hardening of backend infrastructure –
    - [Unsure of how much technical information is appropriate here if it is to be included]

9. Industry standard security practices –
    - Acyclica employs logical access controls to ensure minimally assigned access and privileges, based upon a need-to-know. Vulnerability of systems are managed with patch procedures and change management processes, and logs are captured and monitored for maximum security awareness of the state of the devices and systems

10. Security language built into the contractual agreement with customers/clients –
    - Acyclica has built specific security language into their contracts to clearly delineate the responsibilities between Acyclica and the customer/client for security of data and associated regulatory requirements.

Validation

In order to validate the design and operational effectiveness of Acyclica's security program which protects the non PII MAC address data that it collects for analysis, Coalfire reviewed Acyclica's proprietary encryption code, as well as their documented processes. Additionally, configuration settings were validated with demonstrations and real-time observations with administrate personnel. Coalfire also investigated data repositories to look for any PII, as well as validate that the non PII that is captured is appropriately secured when made available to the customer/client.

Results

Based upon the results of the evaluation efforts, Coalfire was able to confirm the operation effectiveness of Acyclica's device and systems design such that there is no PII retained in any data repository, nor is the non PII MAC address ever presented to customer/clients in an unencrypted, unhashed format. Design effectiveness was confirmed with review, observation and interviews of configuration and code implementation with administrative personnel. Documented processes were also validated as effectively designed and operational as

demonstrated by supporting evidence assessed during review of data repositories and device and system configurations.

Conclusion

Acyclica sensor device technology anonymously collects media access control (MAC) addresses data from mobile devices through the use of a WifF connection on their RoadTrend Sensor. The sensor detects the MAC address on mobile devices within a specific broadcast range of signal strength. With this proprietary device, Acyclica is able to be more accurate, capturing significantly more data than traditional mobile apps or traffic pattern analyzers.

Since MAC addresses are hard-coded to a mobile device, they are independent of device ownership such that if device ownership changes, the MAC address on that device remains unchanged. This solution design thus precludes any direct connection to the device owner and cannot indicate any personally identifiable information (PII). The only way to connect a MAC address to a mobile device owner/user is to work with the associated mobile carrier to associate the MAC address to an active mobile phone number listed on mobile customer's account. In this case, the PII resides with the mobile carrier who maintains the details of a mobile customer's account.

This methodology of data collection for vehicle movement is a more secure alternative to the traditional capture of license plate information. Capture of this information can reliably identify the identity of the driver based upon associated vehicle registration information. As a result, license plate data should be considered PII. While this information may not be immediately available to the general public, whomever has access to the data has the ability to retroactively connect the license plate directly to the registered owner of the vehicle.

Even though MAC address data is not PII, if account data from a mobile carrier were to be made available, by means either accidental or nefarious, a third party may be able to correlate the data and use the analysis to track the movements and activities of the mobile device owner/user. In these cases, the movements and activities of the mobile device owner/user could reveal addresses of personal residence or workplace, as well as those dates and times when the mobile device owner/user was regularly present or absent at either location. The likelihood of this occurrence can vary and there are other variables that outside Acyclica that would contribute to the overall level of risk.

Regardless of risk likelihood and level, Acyclica takes active steps to employ industry-standard security measures to protect the non-PII MAC address data itself as it is captured at the device and retained in the backend infrastructure components using a proprietary encryption and hashing methodology. Acyclica also secures both their front end sensor devices, as well as their back end supporting infrastructure components with specific design parameters. Also, the presentation of the data to the customer/client is intentionally pared back to preclude the availability of unhashed, unencrypted MAC address data; instead only the encrypted and hasted data is made available and only through a secure web portal. Finally, Acyclica has incorporated industry standard security practices that enforce strong access controls, configuration management procedures and methods of being aware of the state of the systems at all times.

This comprehensive approach to securing non PII MAC address data was evaluated by Coalfire through review of code and documented processes, as well as validation of configuration settings and investigation retained data. Through this evaluation, Coalfire was able to confidently conclude that PII data is not captured, nor retained and the intended security measures implemented to secure the non PII MAC address data were in place and operating as intended.

Appendix J: CTO Notification of Surveillance Technology

Thank you for your department's efforts to comply with the new Surveillance Ordinance, including a review of your existing technologies to determine which may be subject to the Ordinance. I recognize this was a significant investment of time by your staff; their efforts are helping to build Council and public trust in how the City collects and uses data.

As required by the Ordinance (SMC 14.18.020.D), this is formal notice that the technologies listed below will require review and approval by City Council to remain in use. This list was determined through a process outlined in the Ordinance and was submitted at the end of last year for review to the Mayor's Office and City Council.

The first technology on the list below must be submitted for review by March 31, 2018, with one additional technology submitted for review at the end of each month after that. The City's Privacy Team has been tasked with assisting you and your staff with the completion of this process and has already begun working with your designated department team members to provide direction about the Surveillance Impact Report completion process.

Please let me know if you have any questions.

Thank you,

Michael Mattmiller
Chief Technology Officer

Technology	Description	Proposed Review Order
License Plate Readers	License Plate Reader (LPR) cameras are a specialized CCTV camera with built in software to help identify and record license plates on vehicles. Travel times are generated by collecting arrival times at various checkpoints and matching the vehicle license plate numbers between consecutive checkpoints. This information is collected under the authority of SMC 11.16.200 requiring SDOT to keep records of traffic volumes.	1
Closed Circuit Television Equipment	SDOT has cameras installed throughout the City to monitor congestion, incidents, closures, and other traffic issues. The technology provides the ability to see roads, providing engineers with the necessary information to manage an incident and identify alternate routes. Every camera is available for live viewing by the public via our Traveler Information Web Map (http://web6.seattle.gov/Travelers/). The video is not archived. This information is collected under the authority of SMC 11.16.200 requiring SDOT to keep records of traffic volumes.	2
Acyclica	Acyclica devices are in street furniture throughout the City and determine real time vehicle travel times in the City corridor by identifying WiFi-enabled devices in vehicles, such as smart phones, traveling between multiple sites. The identifying information is anonymized. Additionally, the data is deleted within 24 hours to prevent tracking devices over time. This information is collected under the authority of SMC 11.16.200, requiring SDOT to keep records of traffic volumes, as well as SMC 11.16.220 requiring an annual report on traffic.	3