



**CISA**  
CYBER+INFRASTRUCTURE



# PISCES: Public Infrastructure Security Cyber Education System

## WHO WE ARE

**PISCES—the Public Infrastructure Security Cyber Education System**—is an extension of the Public Regional Information Security Event Management (or PRISEM) regional monitoring system deployed in the Puget Sound region from 2009-2013. The Cyber Security Division of the U.S. Department of Homeland Security (DHS) Science and Technology Directorate (S&T) provided the initial grant funding. Now in partnership with the DHS Cybersecurity and Infrastructure Security Agency (CISA) and Pacific Northwest National Laboratory (PNNL), PISCES has since evolved in to a non-profit organization that partners with the private sector, colleges and universities, and local governments to provide no-cost cybersecurity event monitoring to small public sector organizations.

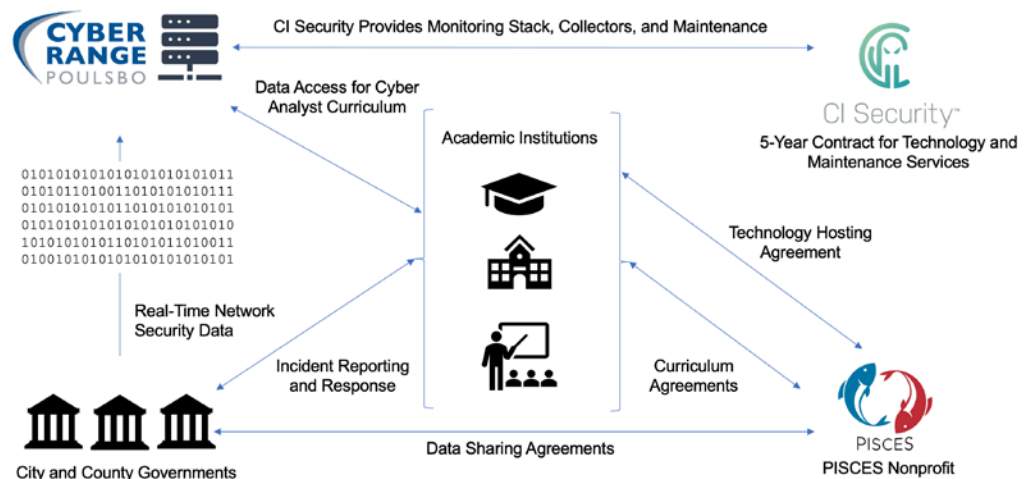
## WHAT WE DO

**PISCES Role** – PISCES adjudicates legal agreements and serves as the ultimate curator of the partnerships with educational institutions

(including those housing the data collection stack), the private sector (providing the technology for collectors and analytic stack as well as necessary professional services and support), and local governments.

**Private Sector Role** – PISCES executed an agreement with CI Security (CI), a cybersecurity detection and response company with security operation centers in Bremerton and Ellensburg WA. CI provides a reduced-functionality version of the commercial monitoring and analytic stack to facilitate on-premise data collection, aggregate intrusion detection and network flows, and allow analyst access for investigation and event confirmation. CI also provides the

## Public Infrastructure Security Cyber Education System (PISCES)



necessary professional services to perform stack maintenance and upgrade and conduct the customer provisioning process.

## HOW IT WORKS

Using metadata collected from customer networks, students act as cybersecurity analysts by evaluating events observed. When a security compromise is confirmed or suspected with a high degree of confidence, it is reported to the impacted jurisdiction for assistance to be provided to quickly remediate.

## DATA COLLECTED

Data privacy and public disclosure limitations are described in the data sharing agreement. The data PISCES collects is limited to:

- a) Packet headers** – metadata about how content is delivered but not the content itself (no e-mail, health records, criminal justice data, financial transactions, or privacy information).
- b) Intrusion Detection System (IDS) alerts**
  - the Suricata IDS is a component of the collector system and updated daily with new public signatures or detection patterns.

## REQUIREMENTS

**Partner Requirements** – At a minimum, local government organizations seeking to execute a data sharing agreement must:

- » Be a public sector organization (e.g., cities, counties, ports, school districts, public utilities).
- » Employ 150 employees or fewer.
- » Purchase a computer to be used as the data collection device. The computer must match the line speed of the internet connection and have 500G-1Tbt of data storage.
- » Acknowledge that this is not a commercial service and the analysts are students.
- » Agree to share anonymized event information.

**Academic Institutions** – Educational partners must sign an agreement that stipulates:

- » The standard curriculum framework will be used, summarily:
  - Operation of the technology stack
  - Analyst tools and investigation techniques
  - Experiential, laboratory, exercise, or extracurricular time as a cybersecurity analyst
- » Improvements to the curriculum will be integrated back into the standard distribution.

## OUR PARTNERS

### **State, Local, Tribal, and Territorial Partners**

**- Current** – PISCES jurisdictions in Washington State include the cities of Anacortes, Arlington, Burien, Cle Elum, Covington, Ellensburg, Kittitas County, and Washougal. San Juan County and Stevens County are recent deprovisioned jurisdictions. Additional state, local, tribal, and territorial partners will be added as the program expands outside the State of Washington.

**Academic Institutions** – Western Washington University, Central Washington University, Spokane Falls Community College, Eastern Washington University, and Alabama A&M University are currently teaching courses using PISCES and more Washington schools are interested in the program. Discussions are ongoing with institutions in South Carolina, Alabama, and Idaho as well.

## LOOKING AHEAD

CISA and PNNL are supporting the project through 2022, with the objective of creating a sustainability model that will address administration and technology costs.

## BECOME A PARTNER

If you represent a jurisdiction or academic institutions interested in participating in PISCES, contact Steve Stein at [steve.stein@pisces-nw.org](mailto:steve.stein@pisces-nw.org)