



Air Quality Monitoring Project

City of Tacoma | Environmental Services Department
Government Finance and Performance
February 16, 2021



Overview



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Relevant Policy



- **Resolution No. 40201**
Authorizing the one-time use of City Council Contingency Funds, in the amount of \$15,000, for the purpose of working with the Puget Sound Clean Air Agency ("PSCAA") to purchase air sensors, and to create a two-year pilot program.
- **Resolution No. 40386 December**
Authorizing the one-time use of Council Contingency Funds, in the amount of \$15,000, for the purpose of working with the University of Washington Tacoma ("UWT") to purchase air sensors and create a two-year pilot program.

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Timeline



- **July 2018 – July 2019:** The City partnered with Portland State University to participate in a voluntary monitoring program using PurpleAir sensors
- **December 18, 2018:** Council approved use of \$15,000 in Council Contingency Funds to contract with Puget Sound Clean Air Agency
- **February 27, 2019:** PSCAA indicated they were unable to contract with us.
- **July 30, 2019:** Council approved use of the funds to partner with UW Tacoma
- **February 27, 2020:** Met with Microsoft to discuss their offered use of their Eclipse Sensors. Deployment of meters put on hold while agreement was worked out with Microsoft
- **July 20, 2020:** Contract negotiated with Microsoft
- **November 13, 2020:** OEPS was informed contract was ready to sign
- **January 26, 2021** Microsoft still committed to working with City but due to workload they are unable to deliver sensors until Spring

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Analysis – Air Quality Monitoring



Purple Air Monitor



Microsoft Project Eclipse Monitor

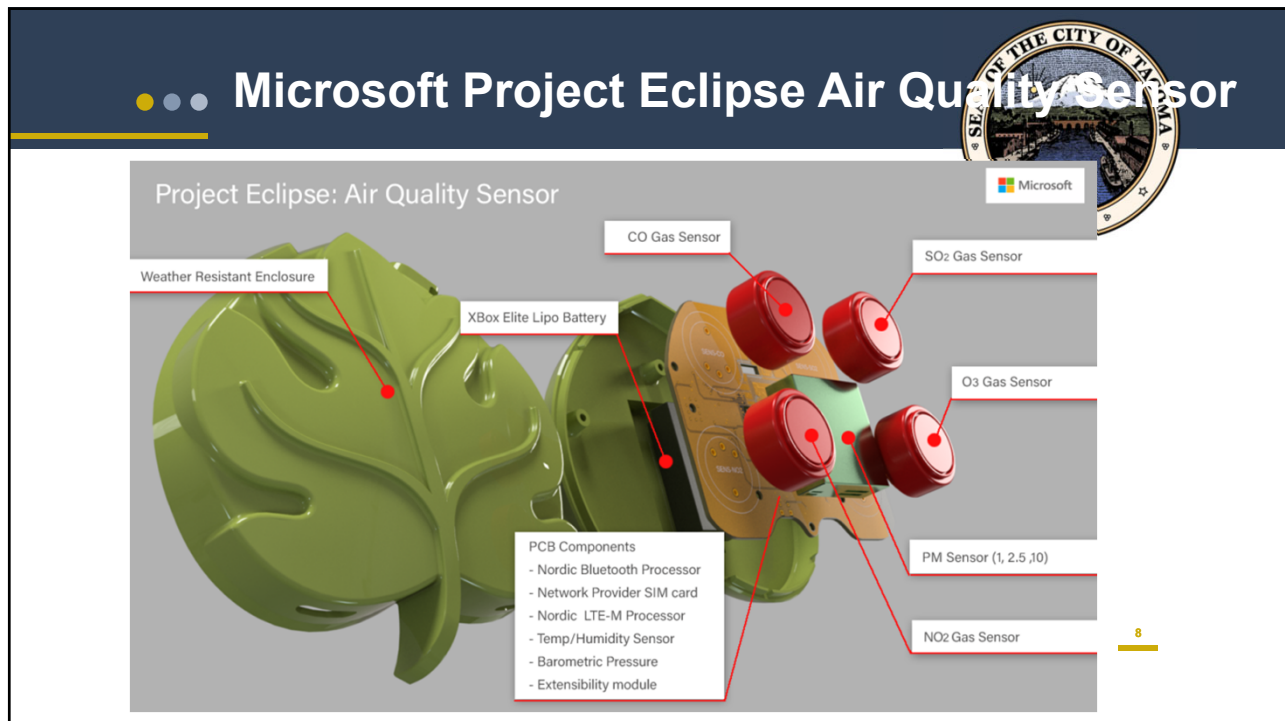
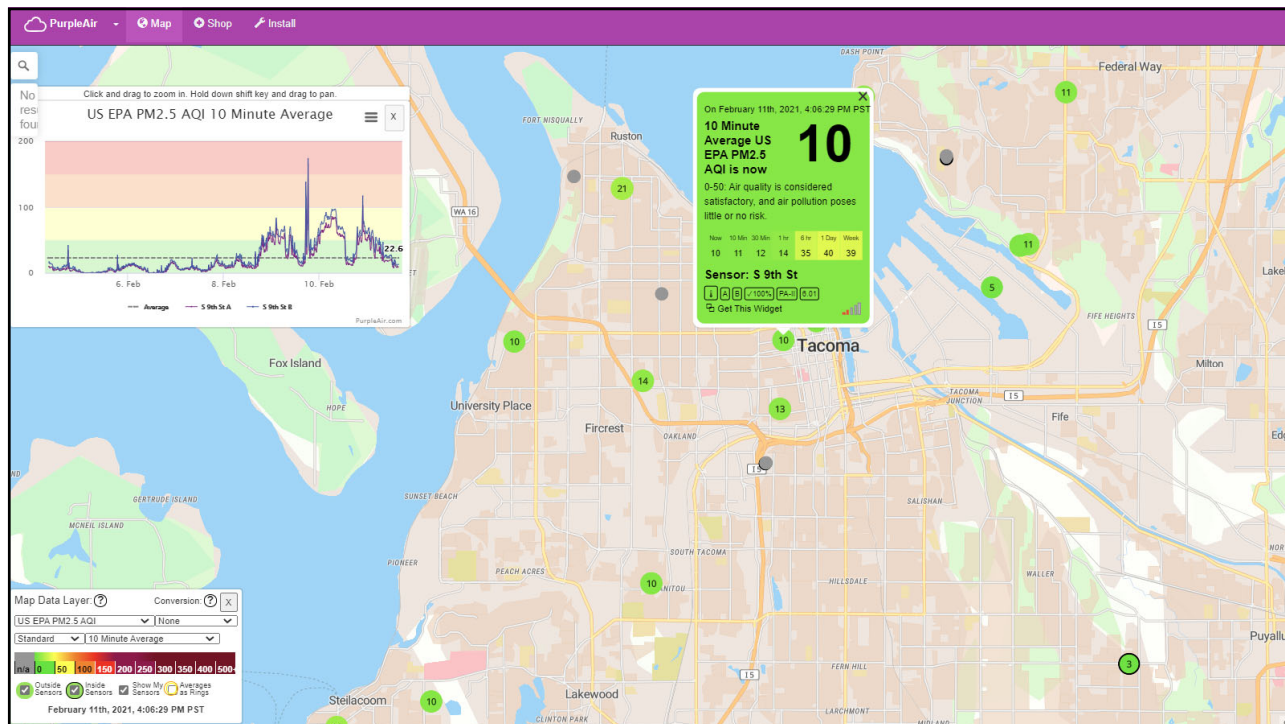
- Initial Purple Air Pilot project outreach was conducted in 2019
 - We acquired 25 sensors from Portland State University
 - Preliminary data collection and analysis was conducted by UW Tacoma
 - Some sensors will remain deployed; others need repair/replacement
- Microsoft Urban Innovation team contacted City in early 2020 about deploying “Project Eclipse” monitors around Tacoma
 - With particular interest in City’s Equity Index and corresponding environmental health considerations
 - Although delayed during COVID, a recent agreement was drafted in 2020 and is ready for signature
 - Next steps include planning for deployment of Microsoft sensors ⁵ and community outreach for air quality monitoring

What is PurpleAir?



- Per Puget Sound Clean Air Agency; Air sensors are intended to be educational and are non-regulatory. This means that they cannot be used for permitting, compliance, policy, or interpretation of health effects.
- PurpleAir sensors use laser particle counters to measure particulate matter like dust, smoke, and other suspended particles typically referred to as particulate matter (PM).
- Real-time air quality data is shared and mapped on PurpleAir.com
- Purchase prices:
 - \$249 (Wi-Fi Needed)
 - \$279 (No Wi-Fi Needed)

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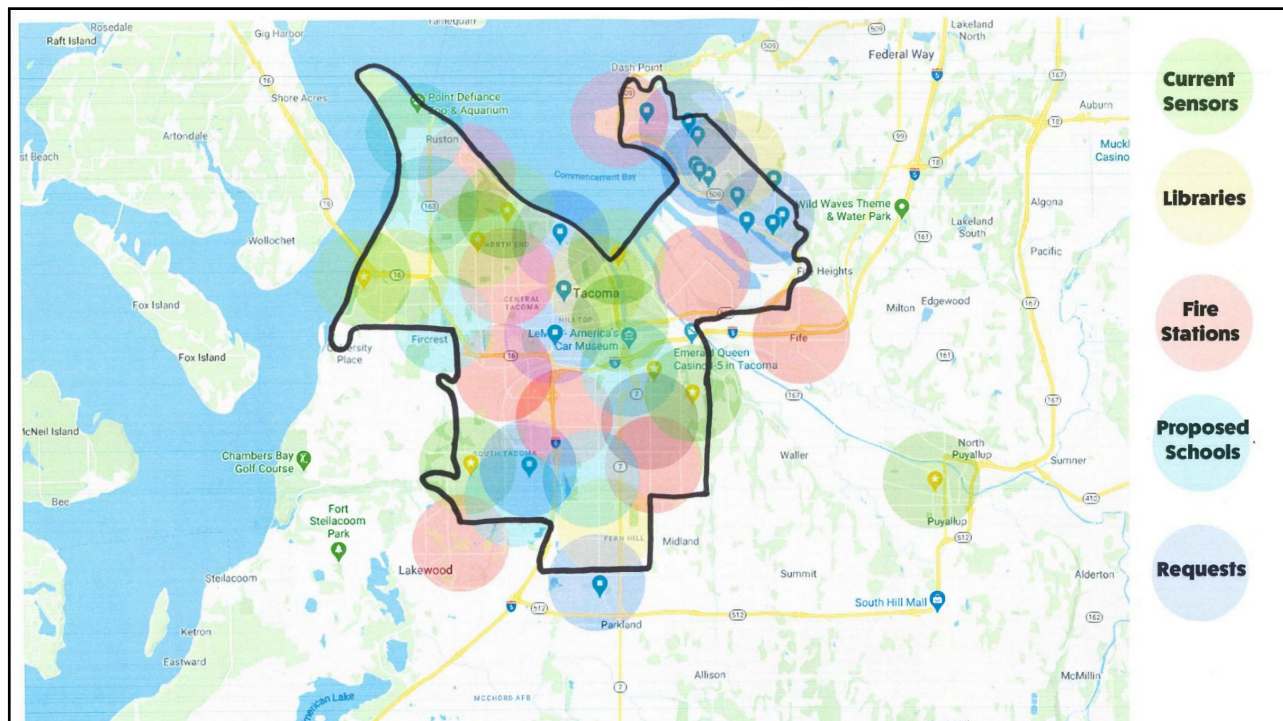


What has been accomplished ?



- Approximately 25 PurpleAir Meters deployed in 2018
- Currently 4 are online. Remainder to be collected from private volunteers and redeployed to publicly owned sites
- Neighborhood meetings held and feedback received
- Microsoft Research Agreement ready to be executed
- Urban Heat Island Analysis; Earth Economics
- GIS Tool 50% Complete by UWT

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Lessons Learned



- Sensors should be deployed at publicly owned facilities to allow better maintenance, internet access, and asset control
- Public facilities allow more representative and equitable deployment
- PurpleAir sensors require access to Wi-Fi and power. Microsoft are self contained with cellular capability and battery/solar power
- Community interested in sensor location
- Regular check ins with leadership and stakeholders to maintain progress.

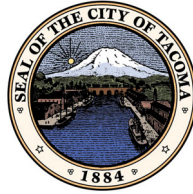
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Next Steps/Questions



- Establish sensor delivery date with Microsoft
- Determine sensor locations based on previous community feedback, equity index, and previous volunteer interest
- Collect remaining Purple Air Meters for repair and re-deployment. Status of sensors as of 2/9/21:
 - Sensors On-Site and Connected: 4
 - Sensors On-Site NOT Connected: 11
 - Sensors Confirmed to be Misplaced: 3
 - Sensors Status Unknown: 7
- Work with Health Department and Tacoma School District to establish new monitoring locations for Purple Air sensors collected and still operational

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