



INFORMATIONAL MEMORANDUM

TO: Finance & Governance Committee

FROM: Joel Bush, Chief Technology Officer

BY: Eric Compton, TIS Franchise Analyst

CC: Mayor Ekberg

DATE: March 7, 2023

SUBJECT: Private LTE / CBRS Proof of Concept Funding

ISSUE

Approval to conduct a Private LTE Proof of Concept (POC) with the Washington State Broadband Office. The State Broadband Office will provide up to \$1 Million in funding for the POC.

BACKGROUND

The City of Tukwila has unsuccessfully applied for grants in the recent past to develop a Private LTE (Long Term Evolution) solution to bridge the digital divide experienced by Tukwila Students. The State Broadband Office reached out to the City of Tukwila to provide up to \$1,000,000 to conduct a POC based on the strength of past grant applications.

Ensuring that every Tukwila student has equitable access to quality internet is the 1st Pillar of Tukwila Smart City Initiative. If successful, this POC can be scaled to meet this end. Additionally, the network can lay the foundational infrastructure for programs to support many other projects including public safety initiatives, measuring air quality, parking availability in the business district, and utility applications.

DISCUSSION

This Private LTE POC will provide quality internet to approximately 1,200 Tukwila students that reside in Tukwila Hill, Allentown and Tukwila International Boulevard neighborhoods. Private LTE is the same technology used by cell carriers on cell phones for over a decade marketed as 4G. The solution will provide cellular connectivity to local students using take home Chromebooks provided by the school district. Tukwila will contract with a partner to manage the provisioning of resources needed to connect the Private LTE network to the Chromebooks.

TIS has consulted with vendors on the feasibility of this project and are confident that the selected vendor will deliver in time and within the agreed upon scope. The Washington State Broadband Office will provide contracting services for the Private LTE Proof of Concept. The final contract will come before the council when it has been developed.

The State Broadband office has implemented a time requirement for the project that the \$1,000,000 will need to be expended by June 30th, 2023.

FINANCIAL IMPACT

There will be limited financial impact in conducting the Private LTE network, but some staff time will be required to determine connectivity of cellular sites to the City or network. In our current discussions, the State Broadband Office will provide enough funds for all infrastructure and three (3) years of spectrum license fees and managed services. Spectrum license and

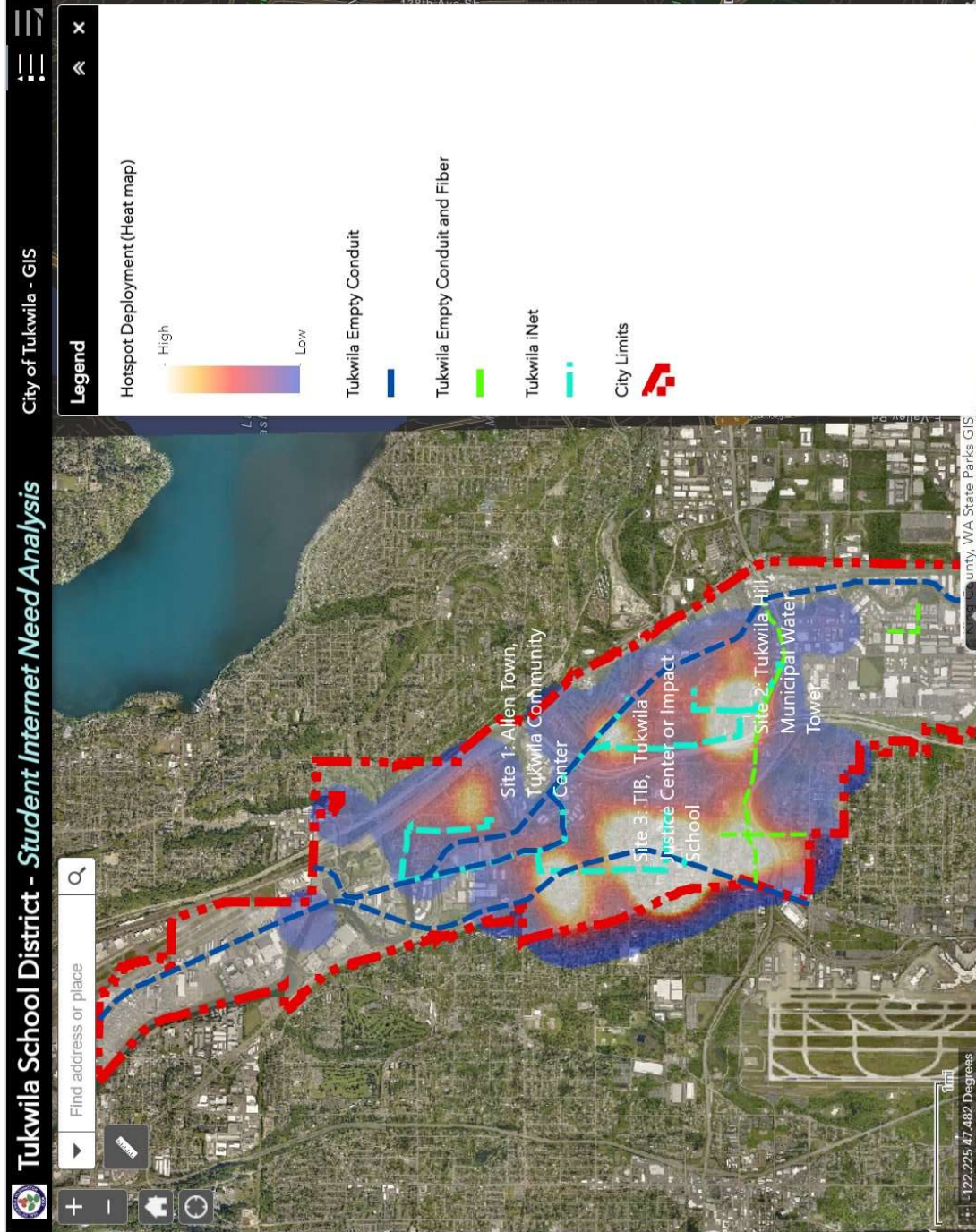
managed service fees of \$94,000 per year will need to be part of the 2025/2026 budget discussions if Tukwila wishes to continue beyond the initial POC.

RECOMMENDATION

The Council is being asked to approve partnering with the Broadband Office on the Proof of Concept at the March 20, 2023 Regular Meeting.

ATTACHMENTS

Student Internet Need Analysis Map
Citizen Broadband Radio Service Spectrum Analysis
Draft of Proposed Cellular Site Locations.



Tukwila Hill

- 56 payor lunch students
- 210 free and reduced lunch students
- **266 TOTAL**

TIB

- 79 payor lunch students
- 687 free and reduced lunch students
- **766 TOTAL**

Allentown

- 35 payor lunch students
- 59 free and reduced lunch students
- **94 TOTAL**

TOTAL SUM OF ALL STUDENTS IN 3 AREAS

1126 TOTAL STUDENTS

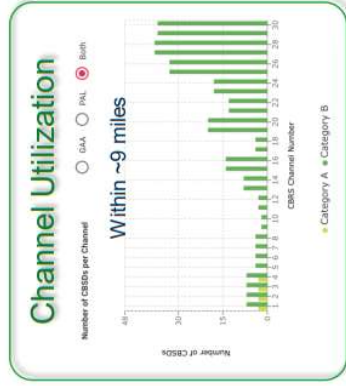
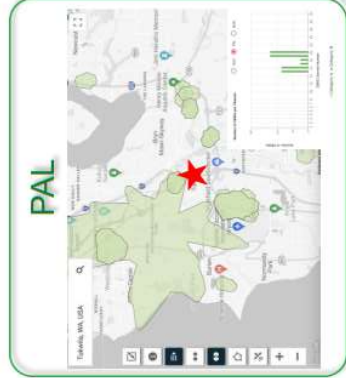
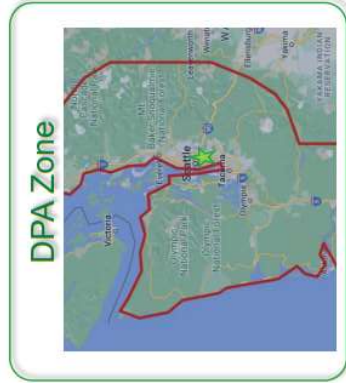
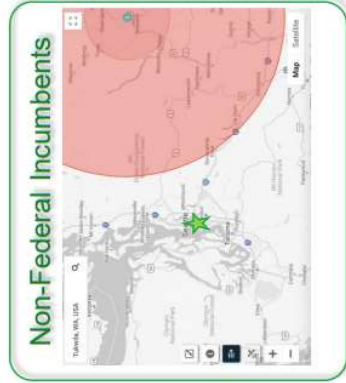
Potential State Broadband Office Private LTE CBRS Proof of Concept

CBRS Spectrum Analysis

Customer	City of Tukwila, WA
Location	Tukwila, WA
Use Case Type	Indoor/Outdoor service for City (TBD)
Bandwidth Required	TBD
Date	18/Jan/2023



Location shows moderate CBRS spectrum utilization within approx. 9 miles. Non-Federal incumbents are not present. Within DPA Zone - radios should be configured to allow frequency change in case of federal activity. PAL channels are present (30 MHz; 3620-3650 MHz). Overall good conditions for CBRS deployments. **GO.**



Draft Cell Site Locations



FIGURE 3: RADIO FREQUENCY COVERAGE

Neighborhood	Site	Facility	Address	Height(ft)	Monopole
Allen Town	AllenTown	Tukwila Community Center	12424 42nd Ave S, Tukwila, WA 98168	60	
Tukwila Hill	Tukwila Hill	Municipal Water Reservoir	15000-14944 57th Ave S, Tukwila, WA 98168	50	YES
Tukwila Hill	Foster	PSE Utility Pole	13537 Interurban Ave S, Tukwila, WA 98168, USA	50	
TIB	Cascade View	Cascade View Elementary school	13601 32nd Avenue S., Tukwila WA 98168	38	
TIB	TIB	Impact Puget Sound Charter School	3438 S 148th St., Tukwila, WA 98168	64	
TIB	Site 2	PSE Utility Pole	38 Rainbow Cir, Tukwila, WA 98188, USA	25	
TIB	Site 3	PSE Utility Pole	15810 39th Pl S, Tukwila, WA 98188, USA	25	