

Project Proposal: VFP-Digital Sanctuary Initiative

Empowering Unhoused Youth Through High-Capacity Connectivity and Infrastructure

Applicant: Village Family Project (VFP)

Project Focus: Enterprise-Grade Network Infrastructure for Transitional Youth Housing

Target Locations: Facility 1 (5 Bedrooms) & Facility 2 (10 Bedrooms)

1. Executive Summary

The Village Family Project (VFP) provides safe housing, stability, and comprehensive support for unhoused youth. For this vulnerable demographic, a smartphone is not a luxury; it is a vital lifeline to safety networks, employment, education, and peer support. However, standard consumer internet hardware cannot withstand the heavy data demands of multiple concurrent users. When a facility's network chokes, lags, or fails, residents frequently leave the premises to seek reliable connectivity elsewhere, returning to high-risk street environments.

The **Digital Sanctuary Initiative** will deploy robust, enterprise-lite network infrastructure across VFP's residential facilities. By eliminating digital bottlenecks, this project transforms VFP homes into high-speed "digital sanctuaries" that incentivize youth to remain in a safe, structured environment. This proposal outlines an immediate deployment framework for VFP's 5-bedroom home, engineered to scale seamlessly to its 10-bedroom facility.

2. Problem Statement & Behavioral Impact

Standard residential internet connections are built for small, predictable family units. They fail catastrophically under the unique conditions of transitional youth housing:

- **The Consumer Hardware Bottleneck:** A standard internet service provider (ISP) router can only manage 4 to 5 concurrent device streams before queuing data. In a house with 10 to 15 active smartphones, laptops, and workstations, the network experiences severe latency and dropped connections.
- **Asymmetric Upload Failure:** Standard cable internet tiers often advertise high download speeds (e.g., 500 Mbps) but severely restrict upload speeds (e.g., 20 Mbps). When multiple residents simultaneously make video calls, apply for jobs, or upload school assignments, the upload pipe collapses, rendering the internet unusable.
- **Structural Signal Loss:** Large, multi-bedroom homes contain dense walls and multiple floors that degrade Wi-Fi signals. Youth assigned to distant bedrooms suffer from poor coverage, isolating them digitally and driving them out of the house.

By replacing inadequate consumer routers with commercial-grade hardware, VFP can provide the seamless, high-speed connectivity required to build trust, ensure digital equity, and keep youth safely off the streets.

3. Technical Strategy & Phased Architecture

The initiative utilizes an **Enterprise-Lite** architecture (utilizing hardware ecosystems like Ubiquiti UniFi or TP-Link Omada). This strategy delivers commercial-grade reliability, remote administrative management, and device density handling at a non-profit price point.

Phase 1: The Core Foundation (5-Bedroom Facility)

The smaller facility serves as the pilot environment. The hardware deployment includes:

- **The Security Gateway/Router:** A dedicated wired firewall with Smart Queue Management (SQM). SQM prevents "bandwidth hogging" by allocating a fair, equal slice of data to every device, ensuring a single large download cannot slow down the rest of the house.
- **The Power-over-Ethernet (PoE) Switch:** A centralized hardware switch that powers the wireless access points through the network cables, eliminating the need for messy electrical outlets near the ceilings.
- **Hardwired Wireless Access Points (APs):** Two ceiling-mounted APs strategically distributed across floors. Unlike cheap retail "extenders" which cut speeds in half, these APs handle up to 100 simultaneous smartphone connections without degradation.

Phase 2: Scaling to the 10-Bedroom Facility

The architecture is inherently scalable. To upgrade to the larger 10-bedroom facility, VFP does not need to redesign the system. The deployment scales by:

- Upgrading to a higher-capacity PoE Switch to accommodate more physical lines.
- Deploying 3 to 4 total Wireless Access Points to blanket the expanded square footage and overcome structural barriers.
- Transitioning the ISP tier to Symmetrical Fiber (equal download and upload speeds) to support 30+ concurrent devices.

4. Comprehensive Budget & Line-Item Estimates

(Note: Hardware costs reflect current market estimates for reliable enterprise-lite ecosystems. Internet service pricing varies by local utility availability.)

Phase / Item Description	Estimated Unit Cost	Quantity (5-Bed)	Quantity (10-Bed)	Total Estimated Cost
Phase 1: 5-Bedroom Facility				
Hardware				

Enterprise-Lite Security Gateway / Wired Router	\$150.00	1	—	\$150.00
8-Port Gigabit PoE+ Network Switch	\$120.00	1	—	\$120.00
Wi-Fi 6 Ceiling-Mounted Access Points (APs)	\$130.00	2	—	\$260.00
Cat6 Ethernet Cabling & Installation Accessories	\$100.00	Bulk	—	\$100.00
Phase 2: 10-Bedroom Facility Scaling				
Enterprise-Lite Security Gateway / Wired Router	\$150.00	—	1	\$150.00
16-Port Gigabit PoE+ Network Switch	\$250.00	—	1	\$250.00
Wi-Fi 6 Ceiling-Mounted Access Points (APs)	\$130.00	—	4	\$520.00
Cat6 Ethernet Cabling & Installation Accessories	\$150.00	—	Bulk	\$150.00
Operational & Recurring Costs (Per House)				
Low-Voltage Structural Wiring Labor (Estimated)	\$600.00	1	1	\$1,200.00
High-Speed Symmetrical Fiber/Cable ISP Tier	\$100.00/mo	12 mos	12 mos	\$2,400.00 / yr
TOTAL INITIAL PROJECT ESTIMATE				\$5,300.00

5. Community and Operational Outcomes

By funding the Digital Sanctuary Initiative, donors will directly enable VFP to achieve the following operational metrics:

- **Increased Resident Retention:** Providing an environment that matches or exceeds public commercial Wi-Fi speeds reduces the behavioral urge for youth to leave the house at night.
- **Remote Management Capability:** The proposed hardware allows VFP tech volunteers or staff to monitor network health, manage content filters, and reboot devices remotely via a smartphone app, removing the need for costly on-site IT technicians.
- **Enhanced Educational & Vocational Success:** Hardwired stability for the organization's Roving Laptop and AIO workstations ensures uninterrupted access to online classes, job applications, telehealth services, and remote work opportunities.