

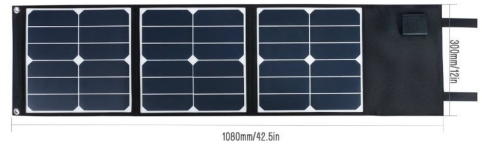
# Solar Powered WiFi Proposal for Columbia Crossing Building

**Introduction:** This is a proposal for a briefcase-size, solar powered WiFi access point for Hayden Island. All the components fit in [a Pelican-style case](#). The briefcase allows (free) mobile internet anywhere on (or off) the island, using LTE for backhaul.



The WiFi hotspot supplies (free) WiFi at the Columbia Crossing Clubhouse (about 100 feet from Hayden Island's firestation). A discounted LTE backhaul plan, available through [ConnectAll.org](#), is

available to 501(c)3 non-profits for \$12/month. This provides the unlimited backhaul service through Sprint. One year of community WiFi service (\$144) is provided. The weather-proof briefcase, on the south Clubhouse wall has a [folding, 40 watt solar panel](#) velcroed on it.



Inside the case, [a powerpack](#), charged by the solar panel, supplies 100W/hrs of power with AC plugs, Type-C USB, and 12V DC outputs. The briefcase WiFi is self-contained providing internet access and power anywhere. It can be stored on the south exterior wall with no public access.

The solar panel, powerpack and mobile hotspot can all fit inside the case. It provides fast, easy, and free internet access for public events. The "captive portal" goes to [myhaydenisland.com](#) normally, and, in the event of an emergency, to [www.hayden-island.net](#).

**Goals:** The goals of the solar powered briefcase include:

- (1) **Provide Hi-Noon, the island-wide HOA, with free WiFi** in the [Columbia Crossing Clubhouse](#), located near the firestation.



- (2) **Enable emergency information to be disseminated**, using WiFi and cellphones if cellular networks and power are not available.
- (3) **Enable and encourage community events**, using the self-contained briefcase with built-in LTE backhaul and mobile power.

**System Description:** The system is optimized for portability, ease of use and affordability. It is made possible by two things:

- (1) Availability of unlimited LTE access (for non-profits) at a very low rate (\$12/month) on Sprint
- (2) Availability of USB 3.1 Power Delivery solar panels and Lithium battery packs that can charge quickly in the sun and power laptops.

This system all fits in one small briefcase. It enables the ConnectAll Hotspot (\$99) with built-in LTE backhaul (\$12/mo), to operate all day (at 10 watts) using only sunlight and its associated Lithium powerpack (100 watt/hours). No AC electricity is required.

The hotspot routinely provides free WiFi to residents near the Firestation or the Columbia Crossing Clubhouse. The folding solar panel, which can be stored in the briefcase, provides power to the Hotspot. A separate lithium power pack, has 5 volt USB, 12 volt power, and 100 watts of AC power.

The 40 watt solar panel enables the 100 watt/hr power pack to be charged in 3 hours of sun, important in the winter months. Optionally, larger 12 volt solar panels may be utilized, outputting to a cigarette lighter plug where a combination USB Power Delivery and regulated 12 Volt output is available. That could power ham radios, for example, most of the day.

**Budget:** The one-piece briefcase WiFi unit consists of 5 main pieces. There should be very little maintenance costs, save for the flat, \$12/month LTE fee for hotspot connectivity, which is budgeted for one year (\$144). We anticipate that webpage advertising, after one year, should pay for the operational costs and enable long-term sustainability.

1. <a href="#">Franklin R-850 Hotspot</a> , through ConnectAll.org. ....	\$113.00
2. <a href="#">LTE connectivity for 1 year</a> .....	\$144.00
3. <a href="#">Folding, 40 watt solar panel</a> .....	\$100.00
4. <a href="#">Suaoki AC/DC powerpack</a> with USB-C Quick Charge .....	\$149.00
5. <a href="#">Pelican-style case</a> .....	\$ 75.00
6. Misc connectors and tools .....	\$ 18.00
<b>TOTAL</b> .....	<b>\$599.00</b>

**Summary:** This briefcase WiFi supports the island-wide neighborhood association (Hi-Noon) which currently lacks WiFi for community meetings at the Columbia Crossing building. It also provides WiFi at community events such as barbeques and block parties.

A weather-proof briefcase incorporates solar panels, batteries, and the LTE-connected hotspot. A discounted (\$12/mo) unlimited LTE data plan is available for non-profit 501(c)3 organizations like HiNoon. In an emergency, it also provides critical information to smartphones using WiFi.