**Phase I (Site Selection SSER) Prototype/Template Report**

PHASE I

SITE SELECTION AND EVALUATION REPORT INDIAN HEALTH SERVICE

[Name and Type of Facility]

[Location], [State]

*[Month] [Year]*

| **Instructions:**   1. **Edit document as appropriate to fit the needs of the proposed project** 2. **Fill in the blank. Wherever there is a RED bracketed text like “[text]” replace with the requested information (e.g.”[Month] [Year] ” to “June 2019”)** 3. **Multiple Choice. Wherever there is a “[text OR text]” select the applicable sentence or choice and delete those remaining. Do not forget to delete the “OR”. Edit as needed (e.g. “Road Access to the chosen site [does not require any improvements or new traffic control devices. OR requires the following improvements….]” to “Road Access to the chosen site does not require any improvements or new traffic control devices.”)** 4. **Essay. Wherever there is a request for information, such as; “[Include a description of …]” provide a narrative of the requested information along with any other information that may be important or relevant.** 5. **Make Sure the completed document does not contain leftover random “[“ s,“]”s and/or “OR”s** 6. **Use only one system of units, metric or imperial, not both. Generally, a project should use the same system of units from start to finish. The unit system used in the PJD/POR should be the same as that used in the SSER.** 7. **Delete all GREEN instruction text (including the text boxes) from completed document** |
| --- |

[Division of Engineering Services or Area IHS preparing document]

Office of Environmental Health and Engineering

Indian Health Service

Department of Health and Human Services

PHASE I

SITE SELECTION AND EVALUATION REPORT

INDIAN HEALTH SERVICE

[Name and Type of Facility]

[Location], [State]

PREPARED BY:

.

[Name], P.E. Date

[Title]

Office of Environmental Health and Engineering [or appropriate TOP/Tribe]

[Area Name] Area Indian Health Service

Indian Health Service

RECOMMEND APPROVAL:

.

[Name] Date

Director

Division of Health Facilities

[Area Name] Area Indian Health Service

Indian Health Service

APPROVE:

.

[Name] Date

Associate Director

Office of Environmental Health and Engineering [Area Name] Area Indian Health Service

PHASE I

SITE SELECTION AND EVALUATION REPORT

INDIAN HEALTH SERVICE

[Name and Type of Facility]

[Location], [State]

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1. **EXECUTIVE SUMMARY**

[A brief description of proposed project matching the PJD includes the facility type (Hospital, Health Clinic, Small Ambulatory, dental, Quarter etc.), the program type (direct service, 638, Joint Venture, M&I, M&M, replacement, etc.), the location, the size of facility and the IHS Area.]

**Evaluated Sites Summary**: (order of ranked preference)

General Site Description Date Evaluated

| 1. | [Brief Description] | [Date] |
| --- | --- | --- |
| 2. | [Brief Description] | [Date] |
| 3. | [Brief Description] | [Date] |
| 4. | [Brief Description] | [Date] |

| **\*\*\*Example:**   1. **Main St: 32 Ac site commercial 1/31/2024** 2. **HWY 155: 60 Ac parcel on Tribe land 1/31/2024** |
| --- |

**SSER Team Composition:**

| **Name** | **Title** | **Organization** | **Location** |
| --- | --- | --- | --- |
| [Name] | [Title] | [Organization’s Name] | [Brief Location Identifier] |
| [Name] | [Title] | [Organization’s Name] | [Brief Location Identifier] |
| [Name] | [Title] | [Organization’s Name] | [Brief Location Identifier] |
| [Name] | [Title] | [Organization’s Name] | [Brief Location Identifier] |
| [Name] | [Title] | [Organization’s Name] | [Brief Location Identifier] |

The parcels were assessed in terms of area requirements, accessibility, adequacy of support services, potential flood problems, amenities, utilities, etc. Evaluation of the sites was conducted according to the Indian Health Service (IHS) *Technical Handbook for Environmental Health and Engineering Volume II Health Care Facilities Planning, Part 13‐4 – Site Selection and Evaluation Process* (the ‘IHS Guidelines’).

The [number of sites] sites are located within [COUNTY Name] County, New Mexico. Ground level photographs of each of the three parcels are included in [Tab A], and a brief description of each parcel is provided below:

| **\*\*\*Briefly discuss each of the sites. Discuss where it is located (including county); ownership type; land type (trust, fee, etc); Township, Range, Section (if TRS exist for site); size of parcel in acres; description of shape (eg rectangular, triangular, etc); surrounding areas (eg residential area is located to the north, two schools located to the south, undeveloped parcel is located on the west, etc.).**  **Also discuss the accessibility of the site. Is it suburban? Rural? Driveable? What is the accessibility to Public Transportation and/or ridesharing services?**  **Other items to discuss: topography (does it slope or is it fairly flat); public utilities nearby? Which ones?**  **Include an aerial (can be via Google Earth).\*\*\*** |
| --- |

**Site #1 – [Name of site/identifier AND GPS Coordinates] (Lat, Lon)**

**Site #2 – [Name of site/identifier AND GPS Coordinates] (Lat, Lon)**

**Site #3 – [Name of site/identifier AND GPS Coordinates] (Lat, Lon)**

Findings and Recommendations: [Identifying the selected site and any other recommendations].

1. **SITE SELECTION EVALUATION SUMMARY SCORE SHEET**

Below is a summary of ratings assigned by the team members, taken from the rating sheets in [Tab C].

**Summary of Evaluations**

|  | **Site #1 WTD Rating** | **Site #2 WTD Rating** | **Site #3 WTD Rating** | **Site #4 WTD Rating** |
| --- | --- | --- | --- | --- |
| Rater #1 | [Number] | [Number] | [Number] | [Number] |
| Rater #2 | [Number] | [Number] | [Number] | [Number] |
| Rater #3 | [Number] | [Number] | [Number] | [Number] |
| Rater #4 | [Number] | [Number] | [Number] | [Number] |
| Totals | [Number] | [Number] | [Number] | [Number] |

1. **BASIC PROJECT DATA AND SITE REQUIREMENTS**

| IHS Area Office | [Area Office Name] |
| --- | --- |
| Service Unit | [Service Unit Name] |
| Facility Name and Location | [Facility Name and Location] |
| Type of Health Care Facility | Hospital, Health Center, Clinic] |
| Project Type | [New, Addition, Renovation, Combination] |
| Health Care Facility Size | [Gross Square Meters] |
| Current [year] User Population | [Number] |
| Design [year] User Population | [Number] |
| Annual Patient Provider Visits (PCPV) | [Number] |
| Number of Inpatient Beds | [Number] |
| Annual Outpatient Visits (OPV) | [Number] |
| Annual [Dental Minutes **OR** Dental User Pop **OR** Dental Chairs] | [Number] |
| Number of Staff | [Number] |
| Govt Vehicles | [Number] |
| Bus Parking Capacity | [Number] |
| Staff Quarters | [Number of units] |
| Special Components | [List] |
| Occupancy Type | [Healthcare Occupancy, Ambulatory Healthcare Occupancy, or Other] |

| **\*\*\* The programmed services below should match the Program of Requirements.\*\*\*** |
| --- |

**Proposed Health Care Services (services below should match the Program of Requirements):**

|  | **Ambulatory** |  | **Ancillary** |  | **Specialty Care** |
| --- | --- | --- | --- | --- | --- |
| 🞎 | Eye Care | 🞎 | Laboratory | 🞎 | Cardiology |
| 🞎 | Audiology | 🞎 | Pharmacy | 🞎 | Dermatology |
| 🞎 | Dental | 🞎 | Diagnostic Imaging | 🞎 | Ear Nose Throat (ENT) |
| 🞎 | Primary Care | 🞎 | Respiratory Therapy | 🞎 | General Surgery |
| 🞎 | Emergency | 🞎 | Surgery | 🞎 | Neurology |
| 🞎 | Emergency Medical Service | 🞎 | Orthopedic | 🞎 | Orthopedic |
|  |  |  |  | 🞎 | Ophthalmology |
| 🞎 | Behavioral/Mental Health/Social Services Alcohol & Substance Abuse |  | Facility Support | 🞎 | Urology |
|  |  | 🞎 | Clinical Engineering | 🞎 | Other |
|  |  | 🞎 | Facility Management | 🞎 | Public Support Space |
|  |  |  |  |  |  |
|  | **Inpatient** |  | **Physical Rehab Services** |  | **Support Services** |
| 🞎 | Acute Care | 🞎 | Rehabilitation | 🞎 | Housekeeping & Linen |
| 🞎 | Intensive Care | 🞎 | Occupational Therapy | 🞎 | Medical Supply |
| 🞎 | Labor and Delivery | 🞎 | Physical Therapy | 🞎 | Property & |
|  |  |  |  |  | Supply |
|  |  | 🞎 | Physical Rehab Services | 🞎 | Education |
|  | **Preventative** | 🞎 | Public Space | 🞎 | Employee Facilities |
| 🞎 | Public Health Nutrition | 🞎 | Speech Pathology | 🞎 | Public Facilities |
| 🞎 | Public Health Nursing | 🞎 | Support Space |  |  |
| 🞎 | Health Education |  |  |  |  |
| 🞎 | Wellness Center |  |  |  |  |
|  |  |  |  |  |  |
|  | **Administration** |  |  |  |  |
| 🞎 | Administration |  |  |  |  |
| 🞎 | Business Office |  |  |  |  |
| 🞎 | Health Information Management |  |  |  |  |
| 🞎 | Information Management (IT) |  |  |  |  |
| 🞎 | Security |  |  |  |  |
| 🞎 | Purchased/Referred Care (PRC) |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Site Requirements**

| **Elements** | **Estimated Needed Capacity** |
| --- | --- |
| Site Size (Facilities) |  |
| Site Size (Staff Quarter w/ recreational space |  |
| Total Size |  |
|  |  |
| Potable Water Needed (GPD) |  |
| Fire Flow (GPD) |  |
| Wastewater Generated (GPD) |  |
| Estimated Planned Renewable Energy (kWh/Year) |  |
| Estimated Planned Renewable Power (kVa) |  |
| Electrical Energy and Power |  |
| Facility Energy: kWh/year |  |
| Facility Power: kVA |  |
| Staff Quarters Energy: kWh/year |  |
| Staff Quarters Power: kVa |  |
| Total Energy: kWh/year |  |
| Total Power: kVA |  |
| Other Energy Source (fuel) |  |
| Natural Gas [ft3/hr] |  |
| IT/Data Systems Bandwidth (Mbps) |  |

1. **TRIBAL CONSULTATION**

[Provide a narrative describing consultation with Tribal authorities and their representatives.] [Identify local/regional long range development plans and objectives (if any) discovered during Tribal Consultation and describe how they are being incorporated into the site selection process including any programmatic and financial impacts].

Tribal Resolution(s) concurring with selection of sites being evaluated are in the Appendix. [No **OR** One of the  **OR** Two of the **OR** Three of the **OR** All of the] sites being evaluated are located on Trust land. [Tribal Resolution(s) to set-aside the land for construction and Bureau of Indian Affairs (BIA) verification that the land is available are included in the Appendix/Tabs].

1. **ALTERNATIVE SITE LOCATION**

| **\*\*\*Property locations can be a general narrative description for each site that also includes the community name, GPS Coordinates, street address, and legal description (metes and bounds etc.). Proximity to important locations like population centers and other facilities should be noted. Information on adjacent property use, future use and ownership may be pertinent to selection.\*\*\*** |
| --- |

|  | **Site #1** | **Site #2** | **Site #3** |
| --- | --- | --- | --- |
| Community Name |  |  |  |
| GPS Coordinates |  |  |  |
| Street Address |  |  |  |
| Size |  |  |  |

Site 1 Location Description: [Description]

Site 2 Location Description: [Description]

Site 3 Location Description: [Description]

1. **PRINCIPLES FOR SUSTAINABLE FEDERAL LOCATIONS**

Following Executive Order 13693 – Planning for Federal Sustainability in the Next Decade, as described in [paragraph [ IV ] Tribal Consultation, IHS investigated Local and Regional Planning Goals] with the [Name of Tribal Organization]. [No local or regional long range development plans and objectives were identified **OR** The following local and regional long range development plans and objectives have been identified to be included as part of the overall evaluation]:

**Local and Regional Planning Goals**

* 1. [Description]
  2. [Description]
  3. [Description]
  4. [Description]

**Location-Efficient Sites**

| **\*\*\* If none, provide a detailed explanation why no such sites are considered feasible candidates for the project. Edit as needed.\*\*\*** |
| --- |

[Number] of the sites evaluated [are **OR** is] within the Central Business District or Rural Town Center**.**

[Number] of the sites evaluated [are **OR** is] adjacent to the existing staff quarters. [Number] of the sites evaluated [are **OR** is] within walking distance of the existing staff quarters. [Number] of the sites evaluated [are **OR** is] adjacent to the proposed staff quarters. [Number] of the sites evaluated [are **OR** is] within walking distance of the existing proposed quarters. [Number] of the sites evaluated [are **OR** is] within walking distance of the remaining IHS/Tribal health care facilities. [Number] of the sites evaluated [are **OR** is] adjacent to the remaining IHS/Tribal health care facilities.

# VII. LAND AREA REQUIREMENTS

| **\*\*\* The land area requirements can be either calculated using the below calculations OR taken directly from HSP.\*\*\*** |
| --- |

The Minimum required land area for the [Facility Name and Location] is [Number] [hectares **OR** Acres].

| Minimum Facility Site Size | Hectares **OR** Acres | **=** | Facility Footprint [(m^2) X 0.00090 m^2/ha **OR** (ft^2) X 0.000207 ft^2/Acre] |
| --- | --- | --- | --- |
| Minimum Quarters Site Size | Hectares **OR** Acres | **=** | [# Quarters Units] x 0.135 ha/unit **OR** x 0.0546 Acre/Unit] |
| Minimum Recreation Site Size | Hectares **OR** Acres | **=** | [Base Quarters Area] x 0.05 |
| Minimum TOTAL Site Size | Hectares **OR** Acres | **=** |  |

| **\*\*\*If different assumptions are used, state and show calculation. Whether the facility will be multistory, yielding a smaller footprint area, etc. Space deviating by ±1% from the IHS conventional 5% for recreation or other special features must be justified.**  **For example, the table below shows the land area requirements taken directly from HSP.\*\*\*** |
| --- |

| **Site Requirements:** | **1 Story** |
| --- | --- |
| HSP Calc (Acres) |  |
| Site Calc or Footprint x9 (sqft) |  |
| Site Calc or Footprint x9 (Acres) |  |
| Floor Area (sqft) |  |
| Stories |  |
| Building Footprint |  |
| Vegetated Area Footprint |  |
| Parking Spots |  |
| Parking (Spots\*1075/5) (sqft) |  |
| or 250 sqft per space incl aisle |  |
| Onsite WW? |  |
| 25% exp (sqft) |  |
| Sum: (sqft) |  |
| SF 1.2 (sqft) |  |
| Calc'd Acres |  |

| **Site Requirements:** | **2 Story** |
| --- | --- |
| HSP Calc (Acres) |  |
| Site Calc or Footprint x9 (sqft) |  |
| Site Calc or Footprint x9 (Acres) |  |
| Floor Area (sqft) |  |
| Stories |  |
| Building Footprint |  |
| Vegetated Area Footprint |  |
| Parking Spots |  |
| Parking (Spots\*1075/5) (sqft) |  |
| or 250 sqft per space incl aisle |  |
| Onsite WW? |  |
| 25% exp (sqft) |  |
| Sum: (sqft) |  |
| SF 1.2 (sqft) |  |
| Calc'd Acres |  |

The estimated ratio of the facility site area to the facility footprint area is about 9. This is based on several assumptions including: GSA security requirements under sustainability require a [15 m **OR** 50 ft] envelope around building; LEED recommends a vegetated open space equal to the building footprint to promote biodiversity and stormwater management assistance; about 10% of the footprint and parking area (main impervious surfaces) will be needed for onsite stormwater storage; 5 parking spaces per [100 m2 **OR** 1,075 ft2] of footprint space [23 m2 **OR** 250 ft2] per parking space which includes half an aisle); on-site wastewater disposal; a 25% footprint expansion area; a small allotment for fuel storage, water storage and misc.; and a 1.2 safety factor. Each site will be different based on soils, local rainfall, topography etc.

**Size of Alternative Sites Being Evaluated**

|  | **Site #1: [NAME]** | **Site #2: [NAME]** | **Site #3: [NAME]** |
| --- | --- | --- | --- |
| **Size (Acres)** |  |  |  |

1. **ACCESS**

| **\*\*\* Access information should include discussion on any records of easement, public road frontage, responsible party for maintenance and repair, whether the property’s frontage to the public road is sufficient for safe egress, whether access roads are within standards (width, grade, drainage), whether additional access roads would be required, and what improvements would need to be performed. The IHS has restrictions on using funds to improve public access, so other potential funding sources should be identified if applicable.\*\*\*** |
| --- |

**Other Access Relevant Information**

**Site 1. Access Description:** [Describe access to the site…]

**Site 2. Access Description:** [Describe access to the site…]

**Site 3. Access Description:** [Describe access to the site…]

See [Appendix C] for Score Sheets.

1. **OWNERSHIP INFORMATION**

**Site 1. Ownership Description:** [Describe ownership of the site, land status (fee/trust), cost, size, comparison, etc…]

**Site 2. Ownership Description:** [Describe ownership of the site, land status (fee/trust), cost, size, comparison, etc…]

**Site 3. Ownership Description:** [Describe ownership of the site, land status (fee/trust), cost, size, comparison, etc…]

See [Appendix C] for Score Sheets.

1. **PHYSICAL DESCRIPTION**

| **\*\*\* Physical description of the property in terms of topography must be included. Locations of streams, swales, ridges, significant landforms, wetlands, floodplains, large trees, tree cover, culverts, paved areas, fences, power lines, gas, lines, easements, encroachments for adjacent structures, on-site roads, presence of land locked parcels, cemeteries (adjacent or on-site), and historical properties. Available data on soil i formation concerning water tables, radon potential, naturally occurring asbestos, percolation, potential geothermal, and soil types that could be critical in the site selection process should be noted. Referenced maps can be included here or in an appendix.\*\*\*** |
| --- |

**Other Relevant Physical Description Information**

**Site 1. Physical Description:** [Describe the physical attributes of the site including if it is undeveloped or developed; (appearance of) soil type; amount of trees, bushes, and grasses; topography; (potential) drainage; size of lot; views; distinguishing landmarks nearby (e.g. landfills that present smells, schools that may present traffic issues, height restrictions of the area, etc.), etc.]

**Site 2. Physical Description:** [Describe the physical attributes of the site including if it is undeveloped or developed; (appearance of) soil type; amount of trees, bushes, and grasses; topography; (potential) drainage; size of lot; views; distinguishing landmarks nearby (e.g. landfills that present smells, schools that may present traffic issues, height restrictions of the area, etc.), etc.]

**Site 3. Physical Description:** [Describe the physical attributes of the site including if it is undeveloped or developed; (appearance of) soil type; amount of trees, bushes, and grasses; topography; (potential) drainage; size of lot; views; distinguishing landmarks nearby (e.g. landfills that present smells, schools that may present traffic issues, height restrictions of the area, etc.), etc.]

See [Tab C] for Score Sheets.

**XI. WATER AND WASTEWATER**

**Potable Water**

Potable water need is calculated based on the number of Outpatient Visits (OPV), Average Daily Patient Load (ADPL), number of staff and the number of staff quarters. The IHS estimates potable water demand at 30 gpd per staff, plus 30 gpd per OPV, plus 150 gpd per ADPL, plus 340 gpd per staff quarters.

| **\*\*\*Choose between outpatient without quarter, outpatient with quarters, inpatient without quarters, or inpatient with quarters…Delete what is not necessary\*\*\*** |
| --- |

Because this is an outpatient facility in an urban setting (near a major metropolitan area), the values for ADPL and staff quarters are both “0” as these values are not needed.

**OR**

Because this is an outpatient facility in a rural setting (not near a major metropolitan area), the values for ADPL is “0” (it is not needed). Staff quarters value will be the number of quarters needed and is estimated at \_\_\_\_\_.

**OR**

Because this is an inpatient facility in an urban setting (near a major metropolitan area), the values for ADPL is estimated at \_\_\_\_ (\*\*\*use the values determined via HSP\*\*\*). Staff quarters value will be “0” as this value is not needed.

**OR**

Because this is an inpatient facility in an urban setting (not near a major metropolitan area), the values for ADPL is estimated at \_\_\_\_ (\*\*\*use the values determined via HSP\*\*\*). Staff quarters value will be the number of quarters needed and is estimated at \_\_\_\_\_.

The total estimated potable water need is

| Water Demand (GPD) | = | {(OPVs)/250 days + (# of Staff)} X 30 gpd + [ADPL] x 150 gpd + [# of Quarters Units] X 340 gpd |
| --- | --- | --- |

| **\*\*\*Determine if the sites under consideration need improvements to the water system like a water well, storage, increase in water main size, etc.**  **If the staff quarters are going to be at a different location than the facility, then the water requirements should be identified for each site. Costs for extensions, off-site improvements, connection fees or on site facilities should be noted. Onsite water systems need to consider as applicable, source type, depth to groundwater, distance to surface source, treatment, raw water quality, available water quantity, nearby sources of contamination, amount of required on-site storage and space for facilities. If there are more than one water source at the alternative sites, include information on both systems.\*\*\*** |
| --- |

**Recommended Facility Minimum Potable Water Capacity**

|  | **Recommended / Required** | **Site #1** | **Site #2** | **Site #3** |
| --- | --- | --- | --- | --- |
| Potable Water Capacity (GPD) = |  | [Yes / No] | [Yes / No] | [Yes / No] |
| Available Water Pressure (PSI) = |  | [Yes / No] | [Yes / No] | [Yes / No] |

See [Tab C] for Score Sheets

**Fire Flow**

A required fire flow rate is estimated for the purpose of site evaluations. The actual required fire flow requirements will be specified by the design engineer consistent with the IHS Architect/Engineer (A/E) Guide, the National Fire Protection Association (NFPA) codes, the facility size, and occupancy type. The NFPA 14 code minimum for fire suppression systems is based on the number of stairwells in the building. The engineer must design for 500 gallons per minute (gpm) for the first stairwell and for 250 gpm for all subsequent stairwells, with a maximum of 1,000 gpm for fully sprinklered hospitals and a maximum of 1,250 gpm for buildings not fully sprinklered.

The proposed [health center] will have at least two stairwells if it is a multistory building. While the design will call for the facility to be fully sprinklered, it is not a classified as a hospital but a building. Therefore the proposed fire flow design will be for the maximum flow of 1,250 gpm.

Adequate available water pressure should be > 20 psi (residual pressure).

| **\*\*\* If it is a hospital, it will need to follow more strict guidance on fire flow.**  **State whether the capacity for fire flow is provided using a fire pump connected to on-site water storage or if existing public water utility has the capacity to provide fire flow.\*\*\*** |
| --- |

**Recommended Facility Minimum Fire Flow Capacity**

|  | **Recommended / Required** | **Site #1** | **Site #2** | **Site #3** |
| --- | --- | --- | --- | --- |
| Fire Flow Capacity (GPM) = |  | [Yes / No] | [Yes / No] | [Yes / No] |
| Available Water Pressure (PSI) = |  | [Yes / No] | [Yes / No] | [Yes / No] |

See [Tab C] for Score Sheets.

**Wastewater**

Wastewater generation is estimated to be 80% of water usage. [# of sites] sites [are near community sewer systems with the sewer main located in the roadside **OR** are not near community sewer]. [The sewer mains are conveniently located on the down slope of the property and should eliminate the need for a lift station] **OR** The sites are near community sewer mains but [may] need [a **OR** # of] lift station(s) **OR** The sites are not near a community wastewater system and will need an onsite system installed.]

| **\*\*\*Information about public systems, available capacity, operating utilities and fees needs to be included. The location, depths and sizes of existing collection and distribution lines should be noted along with lift station needs.**  **Onsite wastewater disposal issues ranging from required space, treatment methods, soil suitability and depth to water table must be identified.\*\*\*** |
| --- |

**Recommended Wastewater Capacity**

|  | **Recommended / Required** | **Site #1** | **Site #2** | **Site #3** |
| --- | --- | --- | --- | --- |
| 80% of Water Demand (GPD) = |  | [Yes / No] | [Yes / No] | [Yes / No] |

See [Tab C] for Score Sheets.

**XII. STORMWATER MANAGEMENT**

[# of sites] sites will need to have a storm water management plan.

| **\*\*\* Describe the area’s typical rain intensity and need for drainage. For instance, Albuquerque is and arid area but during a rain event, the intensity can be high. Do the sites have enough land (or size of parcel) to contain a detention or retention pond?**  **Describe potential on-site stormwater or off-site stormwater disposal requirements.\*\*\*** |
| --- |

|  | **Stormwater Management** |  |  |
| --- | --- | --- | --- |
|  | **Site #1** | **Site #2** | **Site #3** |
| Onsite drainage patterns |  |  |  |
| Offsite drainage issues |  |  |  |
| Need For Onsite Drainage Improvements |  |  |  |
| Retention/Detention Pond Space |  |  |  |
| Collection/Disposal Utilities Space |  |  |  |
| Outfall Easements |  |  |  |
| Snow Disposal Space |  |  |  |
| EIS Act compliant |  |  |  |

See [Tab C] for Score Sheets.

**XII. MEDICAL WASTE AND SOLID WASTE DISPOSAL**

| **\*\*\* Describe any medical waste and solid waste disposal issues associated with the site \*\*\*** |
| --- |

|  | **Medical Waste** | **/ Solid Waste Disposal** |  |
| --- | --- | --- | --- |
|  | **Site #1** | **Site #2** | **Site #3** |
| Approved solid waste disposal system available | [Vendor Name] | [Vendor Name] | [Vendor Name] |
| Approved medical waste disposal system available | [Vendor Name] | [Vendor Name] | [Vendor Name] |

**XIII. RENEWABLE ENERGY CONSIDERATIONS**

| **\*\*\*Consider energy implications in site selection and possible building orientation. Prevailing winds, potential for active and passive solar strategies, potential for sun exposure of pedestrian/parking areas in northern climates to assist with melting snow or ice, existing trees for shade and geothermal options are factors that can be described, considered and compared.\*\*\*** |
| --- |

Passive solar heating takes advantage of the existing heat generated by the sun to heat building spaces and does not involve any mechanical devices. A facility designed for active and passive solar heating needs to be oriented to allow heat from the sun to enter in the winter and not in the summer. Although site specific, in the Northern Hemisphere passive solar uses south-facing windows to capture the sun's rays in the winter when the sun is positioned low in the sky. In the summer when the sun is high in the sky, the sunlight is blocked by awnings hanging over the south facing windows. The building material is chosen for its ability to absorb, store and release heat forming a thermal mass that keeps the temperature stable. Active solar power uses solar collectors to convert solar energy to heat and electric power.

Planned renewable energy produced onsite (wind, solar, geothermal) is included in the alternative site’s available energy and power evaluation. Being that the sites are surrounding by residential areas, wind power may not be the best option.

All three sites provide enough sun exposure to produce electricity onsite to power a large percent (if not all) of the electrical needs leading the facility to net zero emissions (in order to comply with [Executive Order 14057](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/)). The Broadmoor site’s size and shape may limit the amount of solar panels that be can be installed.

See [Tab C] for Score Sheets.

**XIV. ENERGY AND POWER**

Energy is the capacity to perform work. Power is the rate at which energy is generated or used. The units for power are Watts (W), which is the same as Joules per second (J/s). The terms load and demand often refer to power. Electricity and other sources supply the power demand of a facility.

The typical major electrical loads in a healthcare facility generally include:

| Lighting Loads   * + Inside Lighting   + Special Lighting   + Outdoor Lighting   Data Center Power Loads\*   * + Cooling System   + The UPS System   + The Critical IT Loads | Equipment Power Loads   * HVAC and Refrigeration * Elevators/Escalators * Building Pumps (Fire, Sump, Water, etc.) * Medical Pumps (Air, Vacuum, etc.) * Kitchen Equipment * Data Processing/PCs * Communication Equipment * Business (Copier/Printers) Machines * Laundry | Medical Equipment Power Loads   * + Diagnostic Imaging\*   + Medical Records   + Laboratory   + Surgery   + Intensive Care, Recovery, Emergency   + Physical and Occupational Therapy   + Inhalation Therapy   + Pharmacy   + Materials Management |
| --- | --- | --- |

\* The presence and size of Data Centers and Diagnostic Imaging loads can impact the estimated energy and power requirements and should be considered. The formula values recommended below are based on historical IHS average usage data which includes the loads of existing Data Centers and Diagnostic Imaging Systems. However, if the proposed facility is mostly diagnostic imaging or data space, the energy needs per unit area may be higher.

The proposed facility will need an adequate supply of energy that can be furnished at a sufficient rate to meet the estimated demand.

The facility’s estimated annual electrical need in kilowatt hours (kWh) and Apparent Power[[1]](#footnote-1) in kilovolt- amps (kVA) is multiplied by 1.25 to accommodate the code NEC (or other) and provide a factor of safety.

These values are used as the minimum amount of energy and power that must be available to the site.

Electricity and natural gas are typically provided by the utility as they are consumed, therefore in addition to having an adequate supply available, it must be verified that the electricity and/or natural gas can be furnished at a sufficient rate to meet the estimated demand (power requirement).

| **\*\*\* Sites that meet the energy and power requirements are then compared based on other energy considerations including:**  **• The Utility Feeder Type to the site, Single Radial Line, Dual Line, or Network Line.**  **• Estimated costs to extend the utility to the site along with the distance; terrain issues, etc.**  **• If the alternative sites are provided energy from different vendors and/or sources, then contrast:**  **o Reliability:-3 year Utility Power Outage History Index,15-minute outages per year**  **o Utility Variance History grouped into Voltage Variation from 0-5%, 6%- 9%, or ≥10%**  **o Utility’s rate structure (cost for energy), and**  **• The options for electric, natural gas, propane, and/or potential renewable energy available.** |
| --- |

The table below is a suggested energy budget based on information from the Energy Information Administration, (EIA) 2012 Commercial Building Energy Consumption Survey (CBECS), and the 2009 Building Energy Data Book for Newly Constructed Hospitals and Medical Facilities. The assumed source mix may vary depending on the location and the available sources. The power demand values are based on the International Electrotechnical Commission (IET) Building Area Method, EIA 2012 CBECS and the National Electrical Code (NEC) minimum loads.

|  |  | **Recommended** | **Minimum** |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Energy** | **Availability** | **Power** | **Demand** |  |
| **Inpatient Facilities** | 440 kWh/m2/yr | 139,565 BTU/ft2/yr | 0.14 kVA/m2 | 44.5 BTU/hr/ft2 | 40% Electric 60% other sources |
| **Outpatient Facilities** | 210 kWh/m2/yr | 66,610 BTU/ft2/yr | 0.13 kVA/m2 | 40.5 BTU/hr/ft2 | 60% Electric 40% other sources |
| **Staff Quarters** | 125 kWh/m2/yr | 39,650 BTU/ft2/yr | 0.13 kVA/m2 | 40.5 BTU/hr/ft2 | 40% Electric 60% other sources |

The energy and power needs estimated by the formulas below are calculated from the Energy/Power budget recommended above. These estimates are only for the purpose of selecting and evaluating sites. A comprehensive, detailed Energy/Power budget based on actual proposed equipment and loads will be developed later by the Architect//Engineer (A/E) performing the facility design (See Technical Chapter 21-5 Electrical Guidelines).

| **If different energy budget assumptions are used they should be noted in the report along with a brief rationalization.** |
| --- |

The formulas used to calculate the minimum Electrical Energy and Power available are expressed in the equations below. For basis of calculating total electrical need, it is assumed the source is 100% electrical:

|  | **Electrical Need** by Building Gross Area (BGA) |
| --- | --- |
|  | **Inpatient** |
| Energy | kWh/yr = 1.25 X [% electrical source] X Building Gross Area (BGA) [m2 X 440 kWh/m2/yr **OR** ft2 X 41 kWh/ft2/yr] |
| Power | kVA = 1.25 X BGA [m2 X 0.15 kVA/m2 **OR** ft2 X 0.014kVA/ft2] |
|  | **Outpatient** |
| Energy | kWh/yr = 1.25 X [% electrical source] X Building Gross Area (BGA) [m2 X 210 kWh/m2/yr **OR** ft2 X 20 kWh/ft2/yr] |
| Power | kVA = 1.25 X BGA [m2 X 0.14 kVA/m2 **OR** ft2 X 0.013kVA/ft2] |
|  | **Staff Quarters** |
| Energy | kWh/yr = 1.25 X [% electrical source] X Building Gross Area (BGA) [m2 X 125 kWh/m2/yr **OR** ft2 X 12 kWh/ft2/yr] |
| Power | kVA = 1.25 X BGA [m2 X 0.14 kVA/m2 OR ft2 X 0.013kVA/ft2] |

|  | **Electrical Need by Building** | **Gross Area (BGA)** |  |  |
| --- | --- | --- | --- | --- |
|  | **Recommended/Required** | **Site #1** | **Site #2** | **Site #3** |
| **Inpatient** |  |  |  |  |
| Energy (kWh/yr): |  |  |  |  |
| Power (kVa): |  |  |  |  |
| **Outpatient** |  |  |  |  |
| Energy (kWh/yr): |  |  |  |  |
| Power (kVa): |  |  |  |  |
| **Staff Quarters** |  |  |  |  |
| Energy (kWh/yr): |  |  |  |  |
| Power (kVa): |  |  |  |  |

| **Total** | **Estimated Facility Electrical Energy** | **and Power Needs** |
| --- | --- | --- |
|  | **Energy (kWh/yr)** | **Power (kVA demand)** |
| Electricity |  |  |

Natural gas is usually sold by the cubic foot (ft3) or cubic meter (m3). Propane and heating oil are usually sold by the gallon (gal). The common unit for comparing fuels in the United States is the British Thermal Unit (BTU). The BTU content of each fuel shown below is the average heat content for fuels consumed in the U. S. in 2015. There are various heating values for fuel. The Higher Heating Value of a particular fuel is the total thermal energy including what would be lost during combustion to the heat of water vapor condensation. The Lower Heating Value (LHV) already subtracts the heat of condensation and is the value used in this guidelines calculations.

The fuel conversion factors used in the following calculations are:

|  |  | **Natural Gas** | **Liquid** | **Fuel Oil** | **BTU** |
| --- | --- | --- | --- | --- | --- |
| 1 kWh | kWh | 0.09473 m3 | 0.145 liter | 0.0933 liter | 3,413 BTU |
|  | 1 kWh | 3.345 ft3 | 0.0383 gallons | 0.0247 gallons | 3,413 BTU |
| Natural Gas m3 | 10.56 kWh | 1 m3 |  |  | 33,550 BTU |
| Natural Gas ft3 | 0.30 kWh | 1 ft3 |  |  | 950 BTU |
| Liquid Propane liter (LPG) liter | 6.90 kWh |  | 1 liter |  | 22,360 BTU |
| Liquid Propane gallon | 26.11 kWh |  | 1 gallon |  | 84,650 BTU |
| Fuel Oil liter | 10.72 kWh |  |  | 1 liter | 34,340 BTU |
| Fuel Oil gallon | 40.57 kWh |  |  | 1 gallon | 130,000 BTU |

Alternative sites need to have available the minimum amount of fuel that will be used (usually only one fuel type, natural gas, propane, or heating oil).

The formulas for the minimum Fuel available are expressed in the equations below. For basis of calculating total fuel need for this facility, it is assumed the source is 100% natural gas:

|  | **Fuel Need - Natural Gas** |
| --- | --- |
| **Inpatient** |  |
| Energy | [m3/yr =% natural gas source X BGA m2 X 41.5 m3/m2/yr OR ft3/yr =% natural gas X BGA ft2 X 137 ft3/ft2/yr] |
| Power | [m3/hr = BGA m2 X 0.02 m3/m2/hr OR ft3/hr =BGA ft2 X 0.065 ft3/ft2/hr] |
| **Outpatient** |  |
| Energy | [m3/year = % natural gas source BGA m2 X 20 m3/m2/yr OR ft3/yr = % natural gas source X BGA ft2 X 65 ft3/ft2/yr |
| Power | [m3/hr = BGA m2 X 0.015 m3/m2/hr OR ft3/hr = BGA ft2 X 0.035 ft3/ft2/hr] |
| **Quarters** |  |
| Energy | [m3/year = % natural gas source BGA m2 X 12 m3/m2/yr OR ft3/yr = % natural gas source BGA ft2 X 65 ft3/ft2/yr] |
| Power | [m3/hr = BGA m2 X 0.015 m3/m2/hr OR ft3/hr = BGA ft2X 0.03 ft3/ft2/hr] |

**OR**

|  | **Fuel Need – Liquid Propane** |
| --- | --- |
| **Inpatient** |  |
| Energy | [liters/yr = BGA m2 X 64 liters/m2/yr X % propane source **OR** gallons/yr = BGA ft2 X 1.6 gallons/ft2/yr X % propane source] |
| **Outpatient** |  |
| Energy | [liters/yr = BGA m2 X 32 liters/m2/yr X % propane source **OR** gallons/yr = BGA ft2 X 0.8 gallons/ft2/yr X % propane source] |
| **Quarters** |  |
| Energy | [liters/yr = BGA m2 X 18 liters/m2/yr X % propane source **OR** gallons/yr = BGA ft2 X 0.29 gallons/ft2/yr % propane source] |

**OR**

|  | **Fuel Need – Heating Oil (HO)** |
| --- | --- |
| **Inpatient** |  |
| Energy | [liters/yr = BGA m2 X 41 liters/m2/yr X % HO source OR gallons/yr = BGA ft2 X 1.0 gallons/ft2/yr X % HO source] |
| **Outpatient** |  |
| Energy | [liters/yr = BGA m2 X 21 liters/m2/yr X % HO source **OR** gallons/yr = BGA ft2 X 0.5 gallons/ft2/yr X % HO Source] |
| **Quarters** |  |
| Energy | [liters/yr = BGA m2 X 12 liters/m2/yr X % HO source **OR** gallons/yr = BGA ft2 X 0.45 gallons/ft2/yr % HO source] |

|  | **Fuel Need by Building** | **Gross Area (BGA)** |  |  |
| --- | --- | --- | --- | --- |
|  | **Recommended / Required** | **Site #1** | **Site #2** | **Site #3** |
| **Inpatient** |  |  |  |  |
| Energy ft3/yr |  |  |  |  |
| Power ft3/hr |  |  |  |  |
|  |  |  |  |  |
| Energy kBTU/yr: |  |  |  |  |
| Power kBTU/hr: |  |  |  |  |
| **Outpatient** |  |  |  |  |
| Energy ft3/yr: |  |  |  |  |
| Power ft3/hr: |  |  |  |  |
|  |  |  |  |  |
| Energy kBTU/yr: |  |  |  |  |
| Power kBTU/hr: |  |  |  |  |
| **Staff Quarters** |  |  |  |  |
| Energy ft3/yr: |  |  |  |  |
| Power ft3/hr: |  |  |  |  |
|  |  |  |  |  |
| Energy kBTU/yr: |  |  |  |  |
| Power kBTU/hr: |  |  |  |  |

**Total Estimated Facility Fuel Requirements**

|  | **Energy** |  | **Power** |  |
| --- | --- | --- | --- | --- |
| Natural Gas |  | ft3/yr |  | ft3/hr |
| Propane |  | gal/yr |  | gal/hr |
| Heating Oil |  | gal/yr |  | gal/hr |

For rating of power and energy at the alternative sites, see [Tab C] for Score Sheets

**XV. INFORMATION TECHNOLOGY (IT) AND DATA SYSTEMS INFRASTRUCTURE REQUIREMENTS**

Health Information Technology (HIT) plays a critical and expanding role in the healthcare as technologies including electronic health records, e-care technologies and mobile health technologies become central to expanding access to primary, acute and preventive care, lowering costs and reforming reimbursement incentives. Telemedicine and remote monitoring applications remove geography and time as barriers to care, allowing instant access with providers and real-time tracking of patient vitals from outside the facility.

The HIT systems, processes and emphasis within IHS facilities are:

* + The secure storage, access and exchange of appropriate health information among patients, consumers, providers, government and quality entities, and insurers.
  + The IHS Electronic Health Record (EHR), the Resource and Patient Management System (RPMS), a decentralized integrated solution for management of both clinical and administrative information.
  + The Health Information Exchange (HIE) that collects patient history documents from various sources, facility types and locations for the secure e change of relevant patient data.
  + Telemedicine /Telehealth

For site selection, the needs to support the above services at the facility are estimated. The primary metric used is Bandwidth available compared to Bandwidth required. Bandwidth is the data transfer rate, usually measured in bits per second (bps), millions of bits per second (megabits per second, or Mbps), or billions of bits per second (gigabits per second, or Gbps). Factors that go into estimating bandwidth requirements are:

| * + - Number of users | * + - Real-time transactions | * + - Storage technology |
| --- | --- | --- |
| * + - Where Users are located | * + - Hardware |  |

The Table below shows recommended minimum Mbps bandwidth speeds for various applications based on information from the Federal Communications Commission (FCC)[[2]](#footnote-2).

The [name of health center, clinic, hospital, etc.) will be classified as an [Outpatient Health Center / Clinic / Inpatient Hospital]. According to the below chart, the required minimum bandwidth shall be greater [\_\_\_\_\_\_\_\_Mbps / Gbps].

| **\*\*\*See below for required minimum speed\*\*\*** |
| --- |

|  | ≥4 Mbps | ≥10 Mbps | ≥25 Mbps | ≥100 Mbps | ≥1 Gbps |
| --- | --- | --- | --- | --- | --- |
| Health Location (1 physician) | X |  |  |  |  |
| Small Health Station (2-4 physicians, ~3,000 ft2 ) |  | X |  |  |  |
| Nursing home |  | X |  |  |  |
| Large Health Station (~ 5 physicians, ~6,000 ft2 ) |  | X |  |  |  |
| Health Center Outpatient Clinic (5-25 physicians) |  |  | X |  |  |
| Alternate Rural Health Clinic |  |  | X |  |  |
| Hospital |  |  |  | X |  |
| Academic/Large Medical Center |  |  |  |  | X |

The other potential IT metrics beyond bandwidth that were considered during the site evaluation are latency, reliability, packet loss, and jitter.

Latency is the wait time caused by the signal travelling geographical distance as well as over the various pieces of IT equipment. Network Latency can be the result of: the transmission medium (whether optical fiber, wireless, etc.); Router or other processing equipment delays; and If signals must be boosted by a repeater.

Packet loss occurs when transmitted packets don’t reach their destination, causing noticeable effects in digital communications.

Jitter is a deviation in the amplitude, phase timing or the width of the signal pulses of a high-frequency digital signal. Jitter is often caused by electromagnetic interference (EMI) or “crosstalk” with other signals. Jitter can cause monitors to flicker, produce audio clicks, loose transmitting data etc. The amount of allowable jitter is highly dependent on the application

Recommended targets for these metrics are shown in the FCC table below[[3]](#footnote-3).

| **Quality Metric** | **Recommended Target** |
| --- | --- |
| Reliability (uptime) | 99.9% |
| Latency | <50 ms primary <120ms back-up |
| Jitter | <20ms |
| Packetloss | <1% |

For rating of IT and Data Systems Available at the alternative sites, see [Appendix C] for Score Sheets.

**XVI. EMERGENCY RESPONSE SYSTEMS**

Availability, adequacy and proximity of emergency response services from fire and police are compared below.

|  | **Emergency Response** | **Systems** |  |
| --- | --- | --- | --- |
|  | **Site #1** | **Site #2** | **Site #3** |
| Distance to Fire Department (miles) |  |  |  |
| Fire Department Response Time |  |  |  |
| Distance to Police Department (miles) |  |  |  |
| Police Response Time |  |  |  |
| Will site Use result in negative impact on Emergency Response Systems? |  |  |  |

See [Appendix C] for Score Sheets.

**XVII. ENVIRONMENTAL FACTORS**

Some environmental factors are not evaluated because they are independent of the site and others because they were considered under the Sustainability section of this report (e.g. avoiding agricultural sites). The following were briefly looked at: Historic Properties; Threatened and Endangered Species; Water Resources; Floodplains; Hazardous Substances; Noise; Visual Resources; Wilderness Areas; Coastal Resources; and Wild and Scenic Rivers. A full investigation for the environmental review/assessment will be completed during phase II of the Site Selection Evaluation Report once the initial site has been determined/selected.

For rating of the Environmental Factors at the alternative sites, see [Appendix C] for Score Sheets.

**XVIII. AVAILABLE SERVICES**

[The Alternative Sites evaluated were within the same community. No discernable difference in available services, including the availability of housing, transportation, education, recreation, shopping, dining, and worship services were documented.

**OR**

The Alternative Sites evaluated were within different communities. Differences in available services, including the availability of housing, transportation, education, recreation, shopping, dining, and worship services we evaluated.]

**Site 1:** [Describe the available services including public transportation, availability of housing, schools, (walkable) dining options, parks, entertainment, etc.]

**Site 2:** [Describe the available services including public transportation, availability of housing, schools, (walkable) dining options, parks, entertainment, etc.]

**Site 3:** [Describe the available services including public transportation, availability of housing, schools, (walkable) dining options, parks, entertainment, etc.]

For rating of the Available Service factors at the alternative sites, see [Appendix C] for Score Sheets.

**XIX. SUSTAINABILITY**

The Recommendations on Sustainable Siting for Federal Facilities guidelines (dated April 5, 2010), and OEHE Technical Handbook Chapter 21-17.2 Sustainability Guidelines for New Facility Construction, Build-To-Lease, and Major Renovation must be addressed. This evaluation includes and gives preference to sites that are:

* NOT prime farmland as defined by the USDA in 7 CFR 657.7;
* Previously developed land whose elevation is lower than [1.5 m **OR** 5 ft] above the 100-year floodplain;
* NOT land specifically identified as habitat for any species on Federal or state threatened or endangered lists;
* NOT land within [30.5 m **OR** 100 ft] of any wetlands as defined by 40 CFR Parts 230-233 and Part 22;
* Previously developed land further than [15 m **OR** 50 ft] from a water body (including seas, lakes, rivers, etc.);
* NOT public parkland;
* Previously developed AND located closer than [805 m **OR** ½ mile] of a residential area (10 units/acre) AND <[805 m **OR** ½ mile] of ≥10 basic services;
* Are located within [405 m **OR** ¼ mile] of one or more bus stops;
* Are located in existing central business districts and rural town centers;
* Have access to existing resources including water, sewer, and power.

For rating of the Sustainability factors at the alternative sites, see [Appendix C] for Score Sheets.

**XX. SECURITY CONSIDERATIONS**

Security issues evaluated in this site selection include: building setbacks [15 m **OR** 50 ft] envelope between building and any vehicle access (parking/roads/drives etc.) that provide protective building perimeters and restrict access; whether the site lends itself to natural surveillance which increases the threat of apprehension through the perception that people can be seen; the site’s level of passing vehicular traffic that could be used as a surveillance asset; and the site’s natural access control which can limit the opportunity for crime by easily differentiating between public space and private space.

For rating of the Security Consideration factors at the alternative sites, see [Appendix C] for Score Sheets.

**XXI. AIRSPACE**

This site selection examined any potential for interfering with an airport’s Airspace. The proposed project [does not **OR** does] interfere with restrictions established on the height of buildings, antennas, watertanks, and other structures per the criteria is found in FAR Part 77 imaginary surfaces [FAA(1993)] surrounding all airports in the United States. This regulation defines the requirements for notice to the FAA Administrator of certain proposed construction or alterations, and establishes standards for determining obstructions to navigable airspace. There are five imaginary surfaces: primary, approach, transitional, horizontal and conical. The purpose of these imaginary surfaces is to protect the airspace surrounding an airport from any hazards to air navigation. If an existing or proposed structure exceeds any imaginary surface, an aeronautical study would be required to identify the effects of the object on the use of navigable airspace.

| **\*\*\*Edit airspace information as necessary.\*\*\*** |
| --- |

The proposed project and potential sites [did not include (edit as appropriate)] any construction or alterations that:

* Are more than [60 m **OR** 200 ft] in height;
* Are within [6,000 m **OR** 3.7 miles] of any runway on an airport with a runway greater than [975 m **OR** 3,200 ft] in length and protrude through an imaginary surface approximated as extending outward and upward at a slope of 1% from the runway;
* Are within [3,000 m **OR** 10,000 ft] of any runway an airport where all runways are less than [975 m **OR**  3,200 ft] in length and protrude through an imaginary surface approximated as extending outward and upward at a slope of 2% from the runway or
* Are within [1,500 m **OR** 5,000 ft] of a heliport and protrude through an imaginary surface approximated as extending outward and upward at a slope of 5 to 1.

[No **OR** A] Heliport is proposed in this project. [Describe heliport needs if necessary…]

For rating of the Airspace factors at the alternative sites, see [Appendix C] for Score Sheets.

TABS

A MAPS

B TRIBAL RESOLUTIONS

C RATINGS SHEET

**TAB A MAPS**

**TAB B TRIBAL RESOLUTIONS**

**TAB C RATING SHEET**

1. The Apparent Power is the necessary volt-amp power required. Apparent Power is a combination of Reactive Power (capacitive and inductive components) and True Power (resistive components). Most circuitry contains a combination of these components. [↑](#footnote-ref-1)
2. Federal Communications Commission. Health Care Broadband in America; Early Analysis and a Path Forward. OBIT Technical Paper #5. August 2010 [↑](#footnote-ref-2)
3. Federal Communications Commission. Health Care Broadband in America; Early Analysis and a Path Forward. OBIT Technical Paper #5. August 2010 [↑](#footnote-ref-3)