Wireless Telecommunications Plan
Internal Scoping Meeting
Yellowstone National Park
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Present:

Mike Reynolds	NPS	mike_Reynolds@nps.gov
David Albertson	Obiquitel Sprint	djalbertson@ubiquitelpcs.com
Rich Dreese	Obiquitel Sprint	rdreese@ubiquitelpcs.com
Tony Hafla	Teton Communication Inc	tony@tetoncommunications.com
Doug Madsen	NPS	doug_madsen@nps.gov
Barbara Fowler	NPS	Barbara_Fowler@nps.gov
Kaelyn Johnson	NPS	Kaelyn_Johnson@nps.gov
Bill Hackett	Western Wireless Communication	bill.Lackett@wwireless.com
Brian Goemmer	Western Wireless Communication	Brian.Goemmer@wwireless.com
Bryan Romeign	Western Wireless Communication	bryan.romeijn@wwireless.com
Eleanor Clark	NPS	Eleanor_Clark@nps.gov
Jim Larson	Verizon Wireless	Jim.Larson@verizonwireless.com
Michael Sandoval	Verizon Wireless	michael.sandoval1cverizonwireless.com
Frank Walker	NPS	frank_walker@nps.gov
John Woody	Union Telephone	Jowoody@union-tel.com
Eril Woody	Union Telephone	pewoody@mtview.union-tel.com
Brian Woody	Union Telephone	bwoody@mtview.union-tel.com
Vern Nye	NPS	vern_nye@nps.gov
Nick Hensley	Xanterra Parks and Resorts	
Hal Broadhead	Yellowstone Park Service Stations	
Rich Troy	Qwest	
Dave Gilbert	Quest	
Jason Boss	Wispwest.net	jboss@wispwest.net
Marco Morales	Wispwest.net	mmorales@wispwest.net

Point in Contact: Mike Reynolds

Agenda:

-Welcome / Introductions
-Why we're here
-Plan / NEPA Process
-Begin internal scoping
-Next steps / Communications

-Purpose / Need
-Proposal Elements
-Resource Issues
-Alternatives / Mitigating Measures

For Providers:
-What are your goals?
-What are your timelines?
-What do you need to accomplish your goals?
-What are the technological avenues to meet your goals?
-What will be happening 20 years from now?
-How have other large Federal Land Managers funded plans?
-How is co-location going to work / have worked escalation?
-What are emerging technologies for camouflage?
-What do you expect of NPS?
-What are the best ways to minimize infrastructure and still meet goals
-How do you plan to meet Phase II requirements?
-How is the Park / (region) divided up for providers?
-What are co-location rules?

Eleanor Clark – Welcome

Yellowstone is evolving with new technology and there is currently a need to develop consistent policy. We need to develop a structure to manage wireless communications

Frank Walker-

Yellowstone is a very diverse and unique area. We need to be conscious of all aspects of history, visitation, and basic function of the park. We are here to discuss what is best for Yellowstone National Park and its visitors. Welcome.

Chris Turk-

Overview of NEPA Process Flowchart on back of agenda.
EIS can take from 4 months to two years
It would be more efficient to develop one plan instead of separating plans for different locations.

Internal Scoping Issues:

Introduction of Sprint – Yellowstone NP Coverage Plan
-Propagation Analysis for PCS (Personal Communication Services)
-Free band allocated to as many as 10 providers (wireless telephone)
-Broadcast (AM/FM/TV) Radio 2-way
-Wireless Internet
-Scientific Instrumentation
-Telephone
-Law Enforcement Transmission (backbone accessible to outside LE, EMS)
-Providers have roadmaps to other technology evolution
-Looking to cover the greatest population w/ least investment
-Need site, access, power, infrastructure, connection to switch (fiber, microwave, copper)

-Microwave needs a clear path
-Fiber ring around road network (really expensive)
-Hotels/Gas stations need better data transmission
-Two ways to get fiber in the ground
- -Trenching
- -Direct burial
-Can put electrical and fiber in same trench
-Temperature sensitivity is an issue
-Capture the visiting public (roaming revenue)
-Looking for high sites that cover large areas (providing coverage)
-Identifying primary sites (current and new) with access and power
-Can work with power companies to increase power
-Build to accommodate multiple users
-From a business sense, one tower serving everyone's customers hurts rivals and increases costs to their customers
-Towers at some sites need 1/8 to 1/4 mile (can engineer to closer distances)
-50 ft minimum separation for two towers in same locations
-Height above tree line depends on maturity of trees (if mature 4-5 ft)

QUEST
-Bandwidth is filtered from Livingston to Gardiner then distributed to Park
-Power on Washburn: {problem getting power up mountain}

-Could potentially accommodate coverage with four elevations (cross-bars on pole)
-15 ft wide triangular platform 30 ft above tree line
-Anything within two miles of a road will need to be lighted
-Suggest a cap at a maximum height FAA would approve without lights
-Once one tower is full, either need to go up in height or build a second tower
- Need at least an ATV type trail for access for maintenance or for primitive site
-Who owns site? Users own equipment on NPS Right of Way, NPS owns site
-Need to involve the FCC, SHPO, and tribes in the development of the plan
-Site will also need back-up power (should be a single generator)
-Maintenance built into rent
-Totally separate sites provide redundancy
-Need additional bandwidth development to be shared
-Need to add additional power
-Need to re-examine existing sites and develop new site plan, if needed
-What areas need to be covered? Where are priorities?
- -Provide service in developed areas is priority
- -Secondly, road corridors (wilderness, t/e species, etc.)
-New wireless reduces physical effects to land lines

Actions
-Western will provide map with carriers' areas
-Need a map that diagrams roads, power, areas, and existing locations (repeaters, commercial carriers,
     Quest tower locations)
-Providers show priorities; footprint needs
-Visitation statistics by developed areas
-Wilderness map

LUNCH
Brief Re-Introduction

Wispwest
-For wireless Internet need a line of sight, mostly 2 ft by 2 ft antenna, need power access (could do
solar)
-Minimum footprint for buildings; perhaps adding modules as need expands

Locations
-Overall Parkwide Data Issue
-Need coverage in the Sylvan Pass area but power is a problem
-Fuel Cell?
        -Not reliable for power in short term
-Existing Locations: Washburn, Bunsen, Elk Plaza, Old Faithful, Grant Village
-New Locations: Canyon, Lake
-Steamboat (JDR Pkwy) cover South Entrance and Flagg Ranch
-Maybe along HWY 191 – power is also a problem
-95 computers in interior of the Park in winter, 1500 during the summer season
-300 residents in Mammoth 800 in Gardiner, 120 residents in Cooke City
-Purple Mountain (Madison)
-Sylvan Pass (Avalanche Creek)
Areas:
        1. Old Faithful
        2. Lake / Fishing Bridge
        3. Canyon
        4. Mammoth
        5. Grant
        6. Madison
        7. Norris
Entrances:
        1. West
        2. South
        3. North
        4. East
        5. Northeast
-Washburn
        -Needs Power, Moving Antennas to another footprint, tower (none), space, FCC,
            RF Data, floor
        -There is road access
        -Washburn is a popular hiking destination

-Old Faithful
        -Alternative Locations to consider
        -Telephone poles spread out
        -Other ways to reduce effects
        -Everyone put their own wooden pole up (some near buildings)
        -Perhaps near Water Treatment Plant?
        -Passive reflector near rim
        -Slimline
        -Floor space
        -Additional site
        -#1 Issue is: **We need to get the Telephone Company into Park**
        -Running fiber around ring road (problems of heat, acidity, archaeological
                impacts, and seismic activity)
        -Microwaves Routes
Sylvan Pass to Cedar Mountain
Out by Madison via Purple Mountain
        Bunsen Peak to Gardiner
        South through Steamboat (through JDR Pkwy)
        Washburn – see all high points
        -Could joint venture
        -Have one company build and others rent
        -Quest upgrade passives with actives (Not soon enough?)

Frank Walker-
-How do we pay for this wireless communication plan?
-How can the different providers work together with the Park Service?
-Ballpark $50,000-$150,000
-Possibly an organization of wireless providers that offer one proposal?

-Wireless Industry purposing a plan developed by engineers?
-What is available to providers?
-Park Service has an interest in backhall
-Will work together with sites
-Ask Quest to join in discussion
-Work on individual provider designs then work together on backhall

Doug Madsen-
-Keep in mind the regulations set for wilderness areas
-For detailed non-sensitive maps of YNP visit the internet

-Working together as a group is the easiest way to develop an effective plan