How to Find Viable Low Power Radio Transmitter Sites

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For audio, call 512-400-4809, pass code 1223422

Webinar Agenda

1. What is a Transmitter Site?
2. What goes at the Transmitter Site?
3. Terrain Concerns
4. Questions and Answers
5. FCC Rules
6. Local Regulations
7. Shared Sites
8. More Questions and Answers

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What is a Transmitter Site?

What is a Transmitter Site?

- Also called:
  - Tower site
  - Antenna site
  - Transmission site
- Houses the equipment that broadcasts the radio signal out to the world
- Sometimes (but not always) co-located with studio

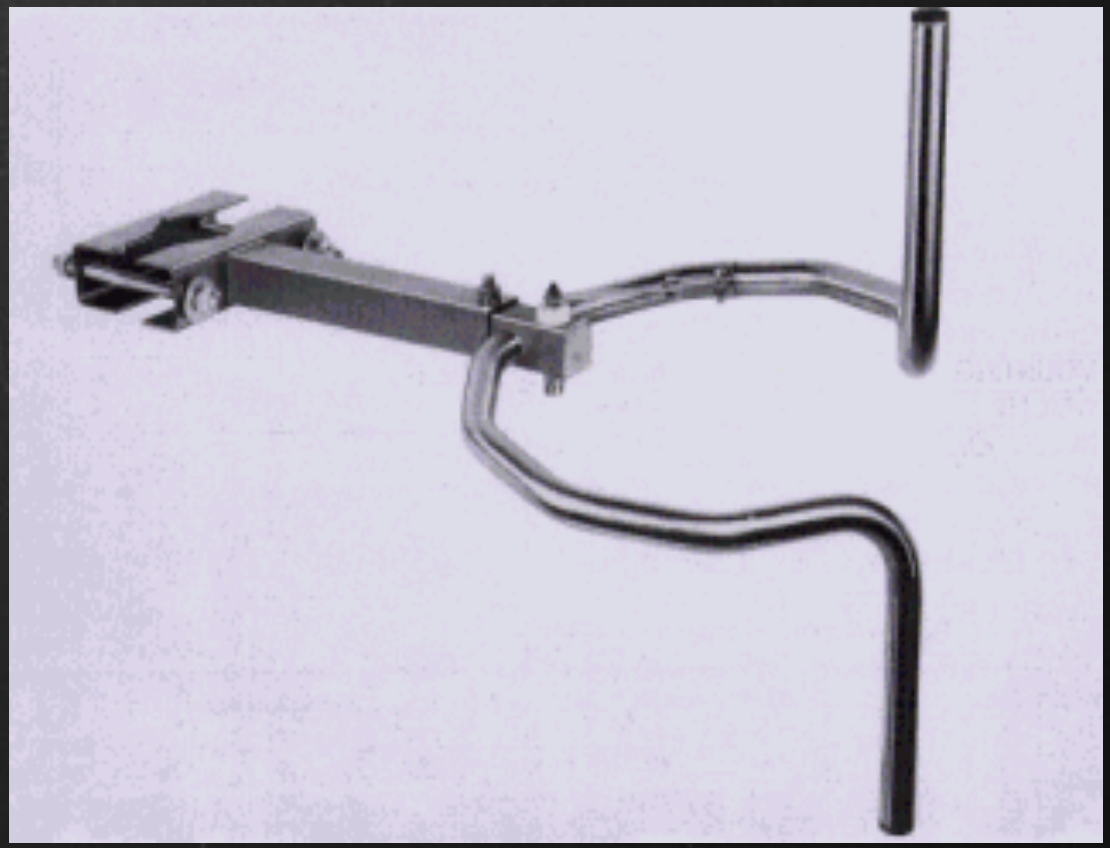
What Goes at the Transmitter Site?

Transmitter and Audio Processor

Needs:

- Enclosure
- Power (not much)
- Maybe climate control

What Goes at the Transmitter Site?



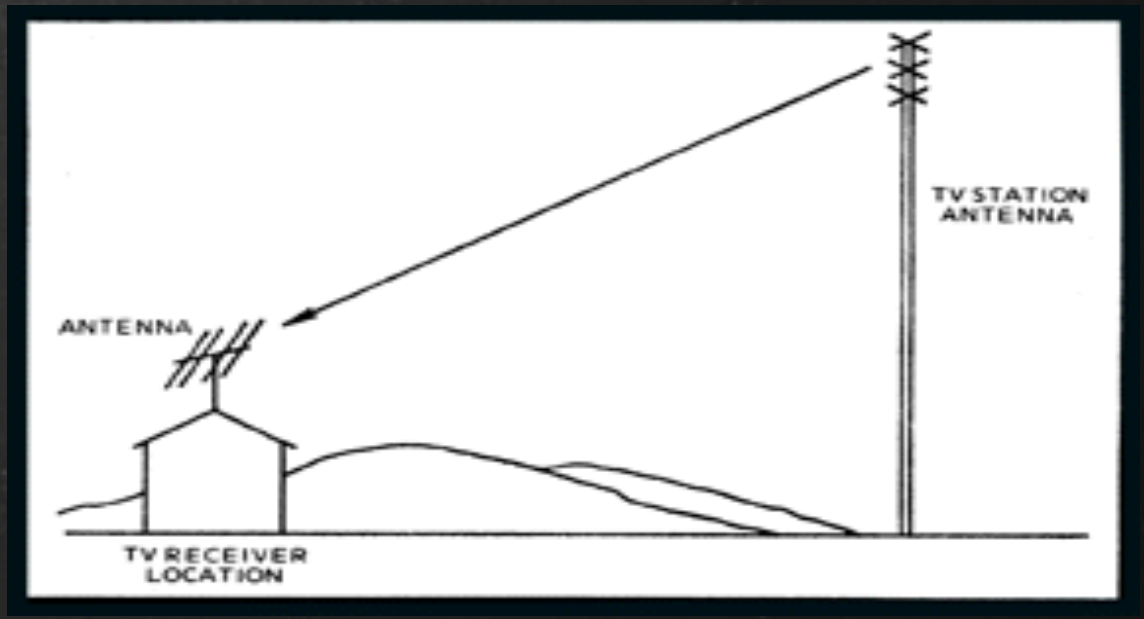
1 or 2 Antennas

What Goes at the Transmitter Site?

Something to hang antenna on

- Tower
- Mast on existing structure

Terrain Concerns



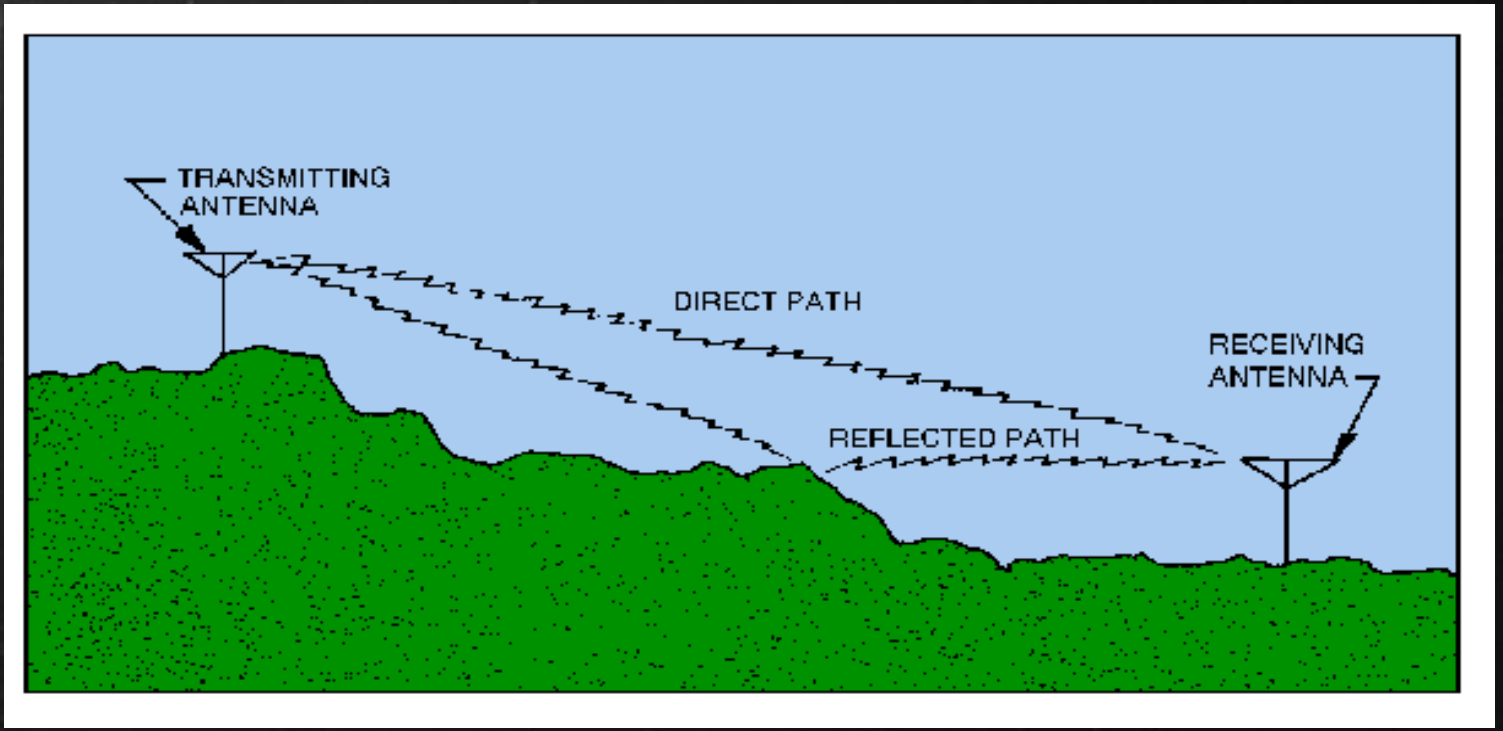
Most important guideline: Radio waves travel best with line of sight

- Highest location in town is generally best
- Can sometimes reach 10+ miles with line of sight

Terrain Concerns

Other things to keep in mind:

- Radio waves travel well over water
- Reflections from structures or hills can weaken signal



Questions?

Please chat your questions to us in the chat window below. We will do our best to get to everyone's questions. Thanks!

FCC Rules

4 categories of rules:

- Rules about available frequencies
- Power and height limitations
- Localism rules
- Radiation exposure limits

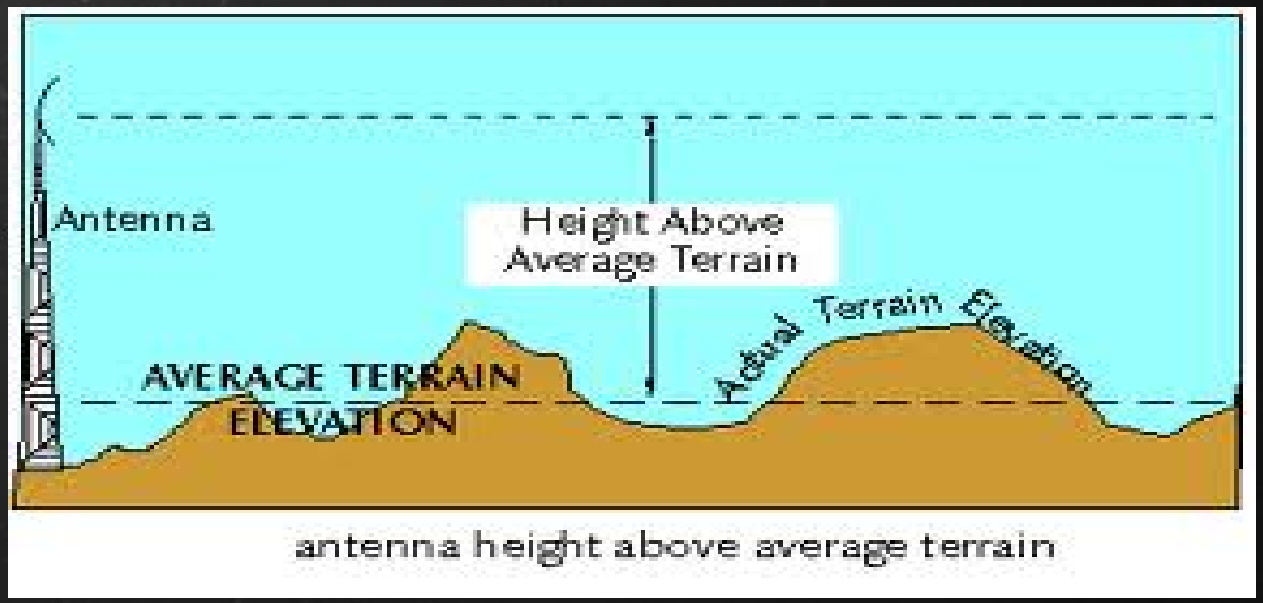
None of these rules are set in stone! But we can guess based on old rules. Prometheus and allies are working with FCC to make the best rules possible.

Rules About Available Frequencies

- Rules specify how far you have to be from other stations, based on how close you are on the dial
- Preliminary search at http://cdbs.recnet.net:8080/lpfm.php?, but could be available channels that don't show up
- Once rules are finalized, engineer can help narrow down available locations
- For now, best to cast a wide net

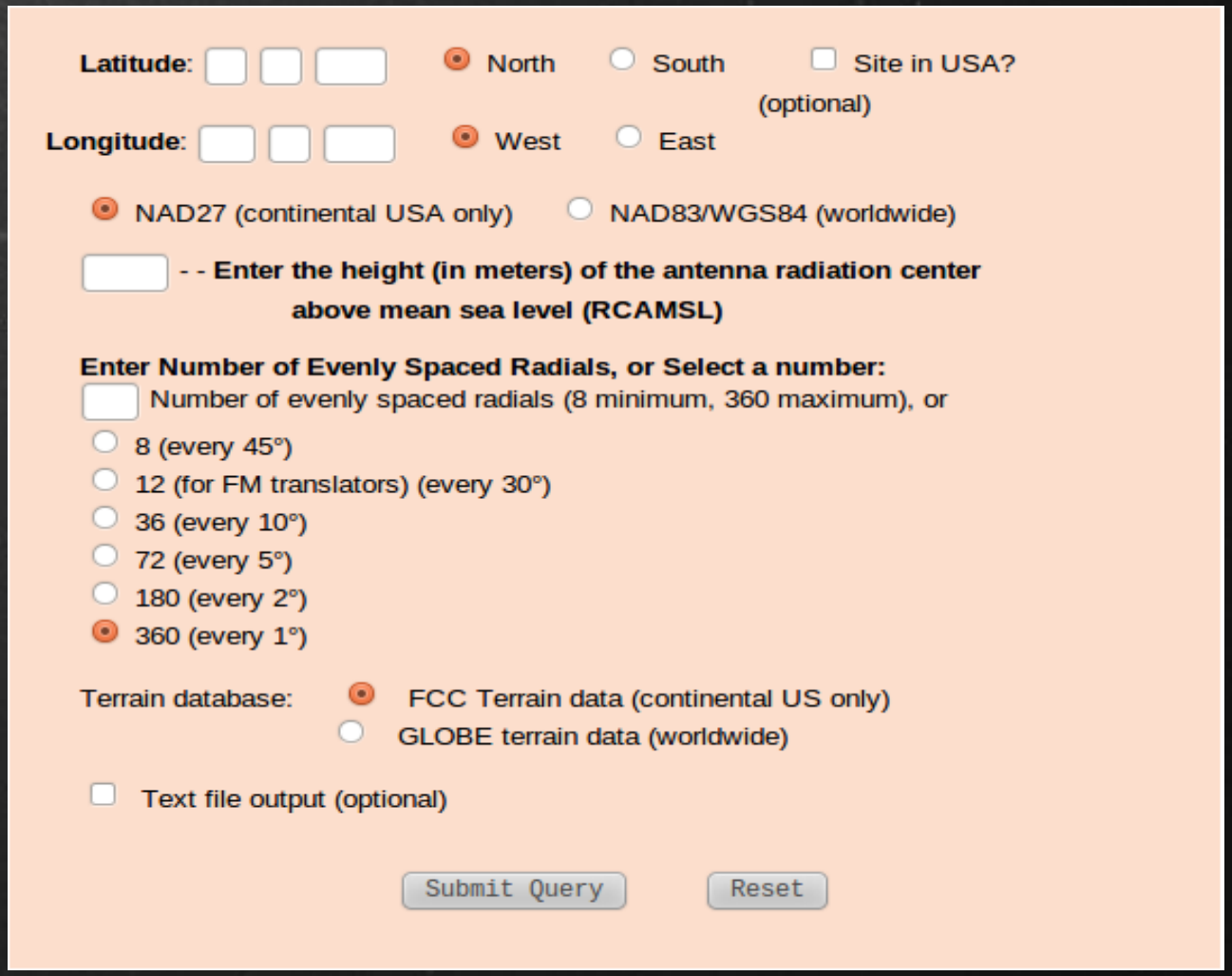
Rules about Power and Height

Current limit: 100 watts at 30 meters *above average terrain*



antenna height above average terrain

- No bonus for being lower than 30 m
- Power decrease required if higher than 30 m



FCC HAAT calculator: http://transition.fcc.gov/mb/audio/bickel/haat_calculator.html

- Use Google Earth for coordinates/elevation
- Choose "NAD83"

Rules about Radiation Exposure

- FCC enforces limits on environmental exposure to radio frequency energy
- Radiation from 100 W station is relatively small
  - Generally no problem if antenna is at least 8 meters (26 feet) above any place accessible to people
  - Otherwise, need to do routine site evaluations

Rules about Radiation Exposure

- Need environmental assessment if site:
  - Is in wilderness area or wildlife preserve
  - Threatens habitat of endangered species
  - Affects officially designated historic places
  - Affects Native American religious sites
  - Is in a floodplain
  - Impacts wetlands, waterways, etc.

Rules about Localism

- 75% of board members within 10 miles of transmitter site
- Nonprofit headquarters within 10 miles of transmitter site

Local Regulations

- Look at zoning laws.
- Find out what structures don't require approval
- If station applicant doesn't own the property, get written notice of "reasonable assurance"

Shared Sites

Pros:

- Probably have necessary infrastructure
- Can share future engineering/space/utilities costs

Cons:

- Often expensive
- Susceptible to scams
- Much more bureaucracy
- Interference to/from other site users
- More total radiation

Where to Learn More

- Relevant FCC rules: http://transition.fcc.gov/mb/audio/bickel/amfmrule.html#LPFM
- Prometheus document on antennas, masts, and towers: http://www.prometheusradio.org/sites/default/files/hang_em_high_2011.pdf
- Future Prometheus webinars: http://prometheusradio.org/webinars
- Sign up for updates at http://prometheusradio.org/want_to_start_a_station

More Questions?

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