

St. Paul Island, Alaska



Doesn't Look Like This!



It Looks Like This!



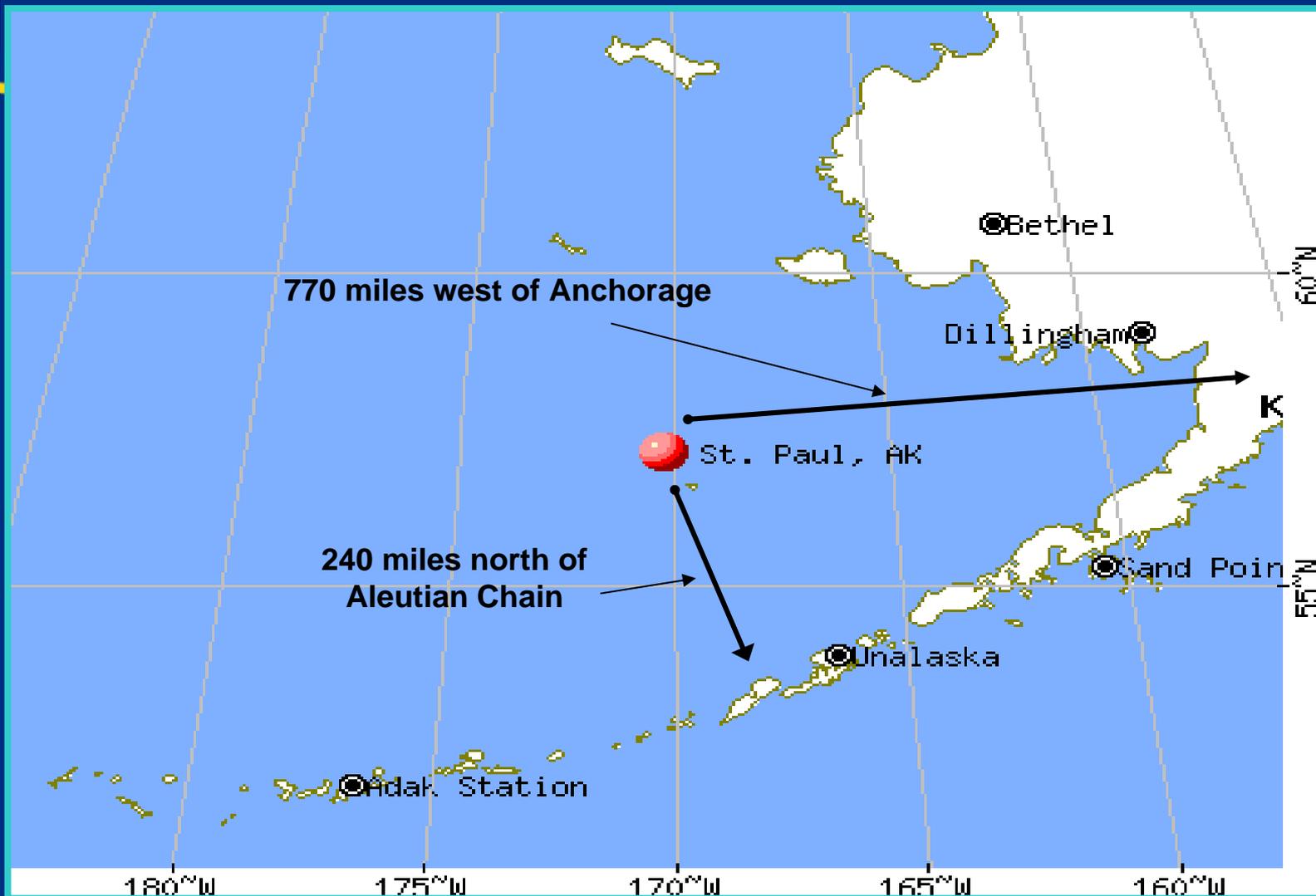
...and Sometimes Like This!



Phoenix, AZ

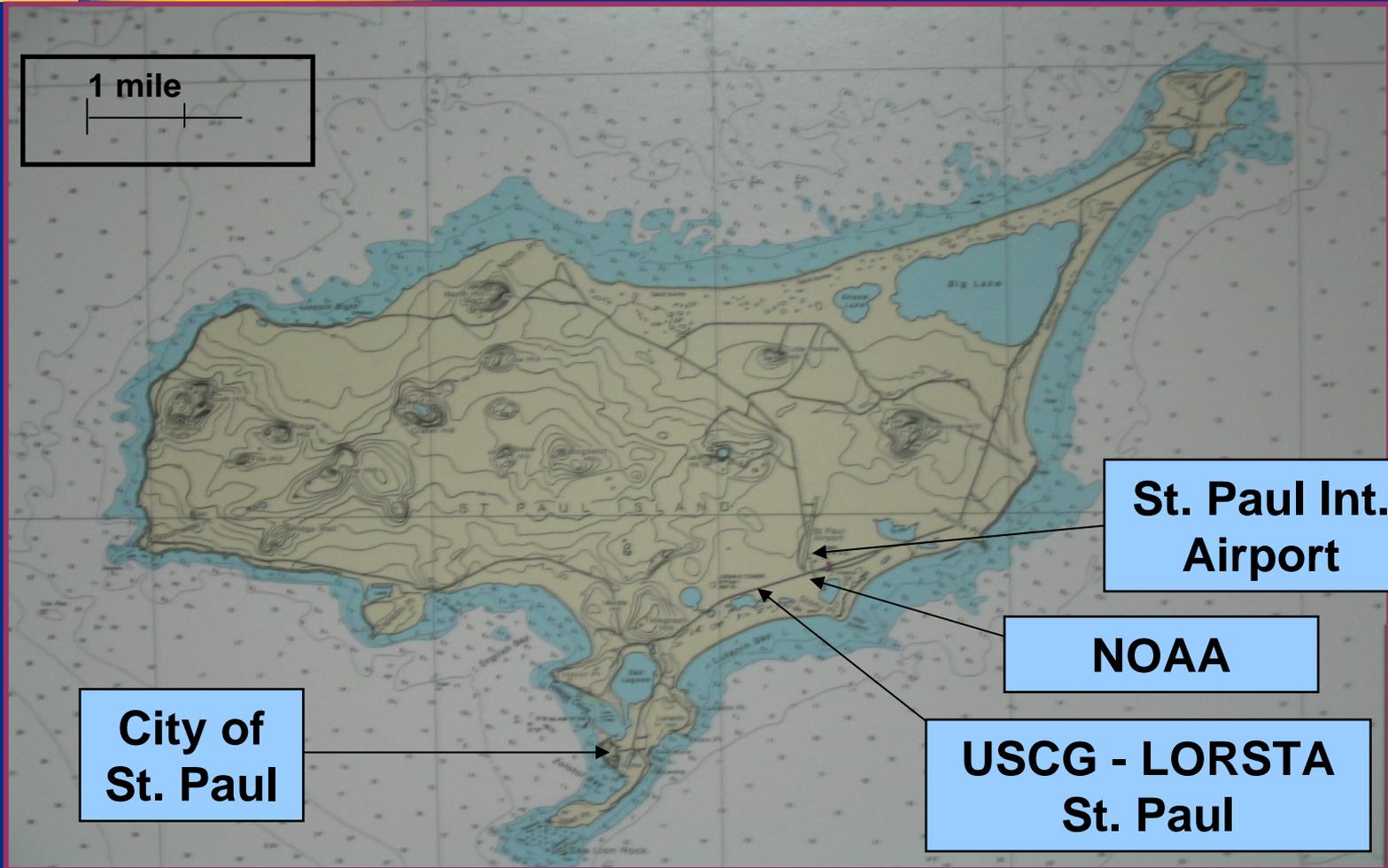
August 3-6, 2008

Where is St. Paul Island





St. Paul Island





St. Paul Island

- **One of Four Pribilof Islands**
- **Approx. 40 sq. miles**
- **~450 Residents, mostly (86%) Native People**
- **Aleut Natives with Russian Surnames, forced in 1700's to Support Fur Trade**
- **Economy: Fishing and Mild Tourism**
- **USCG and NOAA**



Life on St. Paul Island

- “Galapagos of the North”
- More than 150 species of birds
- Pacific Fur Seal
(80% of world population)
- Reindeer Herds
- Blue “Arctic” Fox



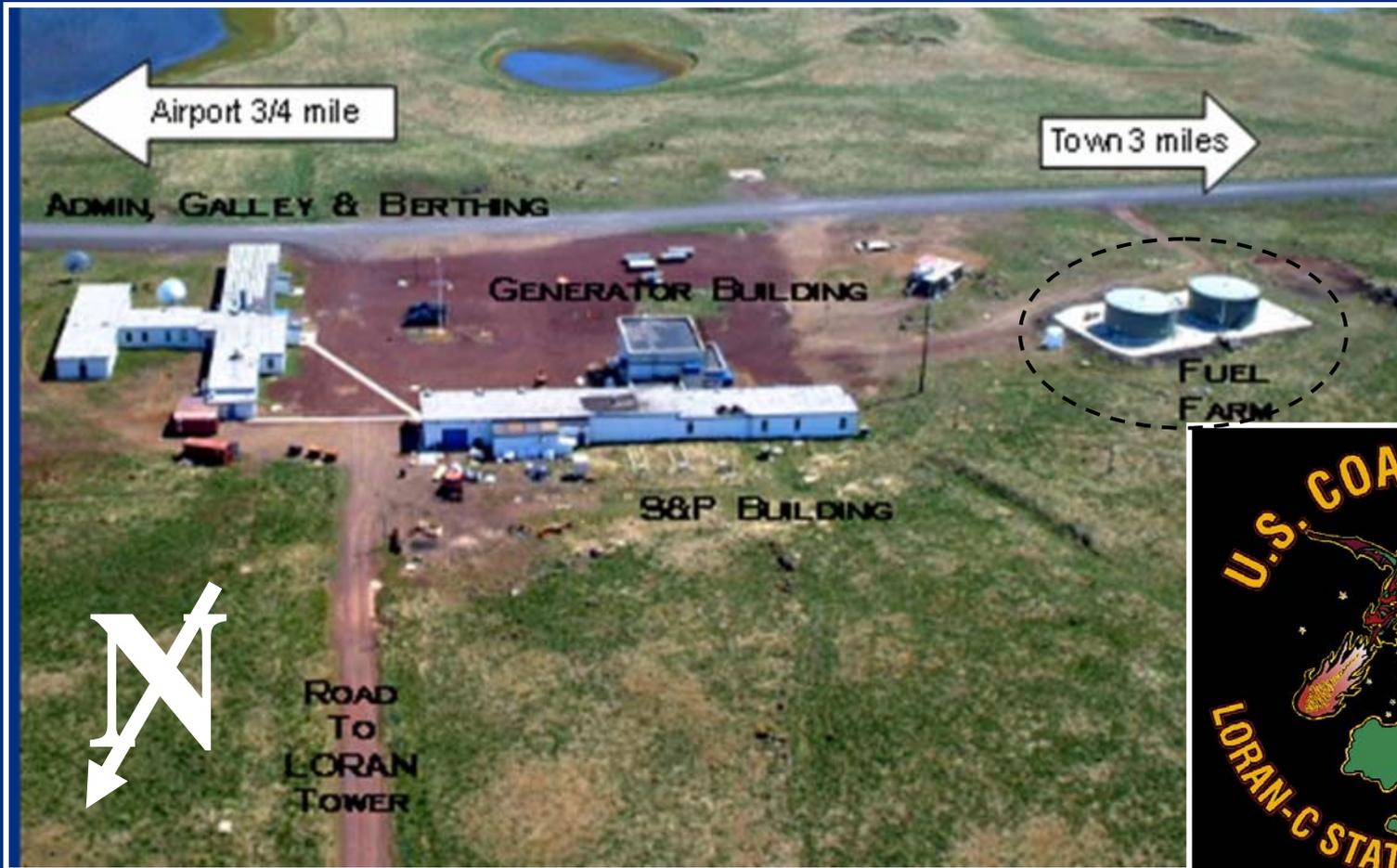


The City of St. Paul





USCG - LORSTA St. Paul





USCG - LORSTA St. Paul

- Staffed by 12-20 USCG Personnel
- 6 Primary Buildings (Est. 1960)
- 32,275 sq. ft.
- Base Load under 200kW
- 3 Generations of Transmitters

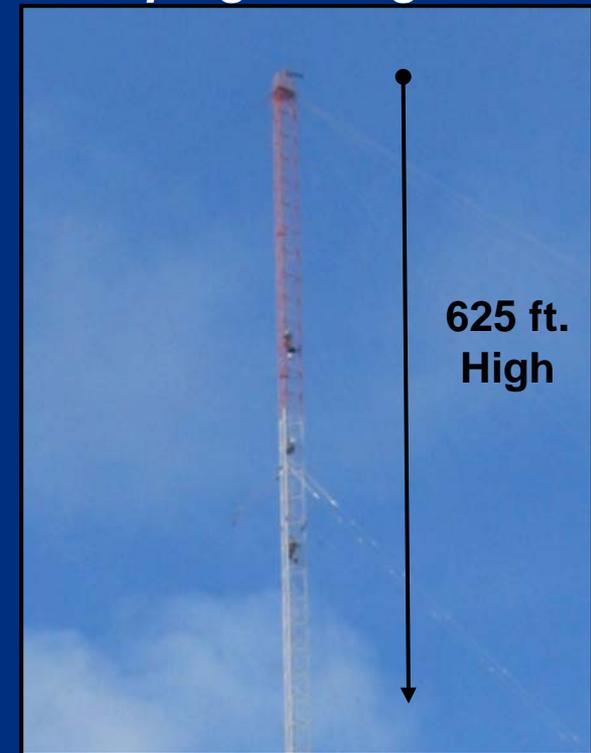




Mission - LORSTA St. Paul

- The only Coast Guard station in the Bering Sea
- Liaison for AIRSTA Kodiak and Juneau Search and Rescue
- Supply and Transfer Point for Coast Guard Cutters in the area
- Sea and Air Based ATON

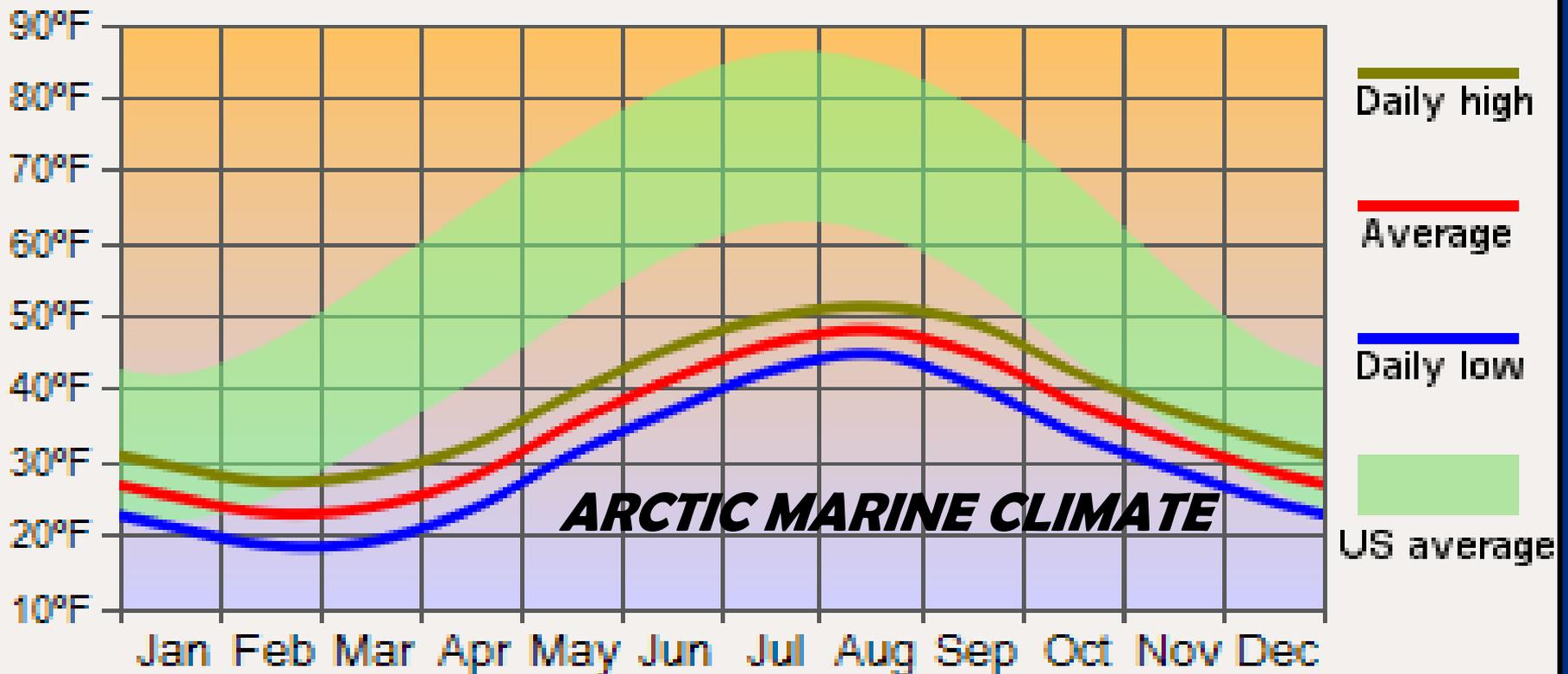
“Keeping the Light On!”





St. Paul Weather

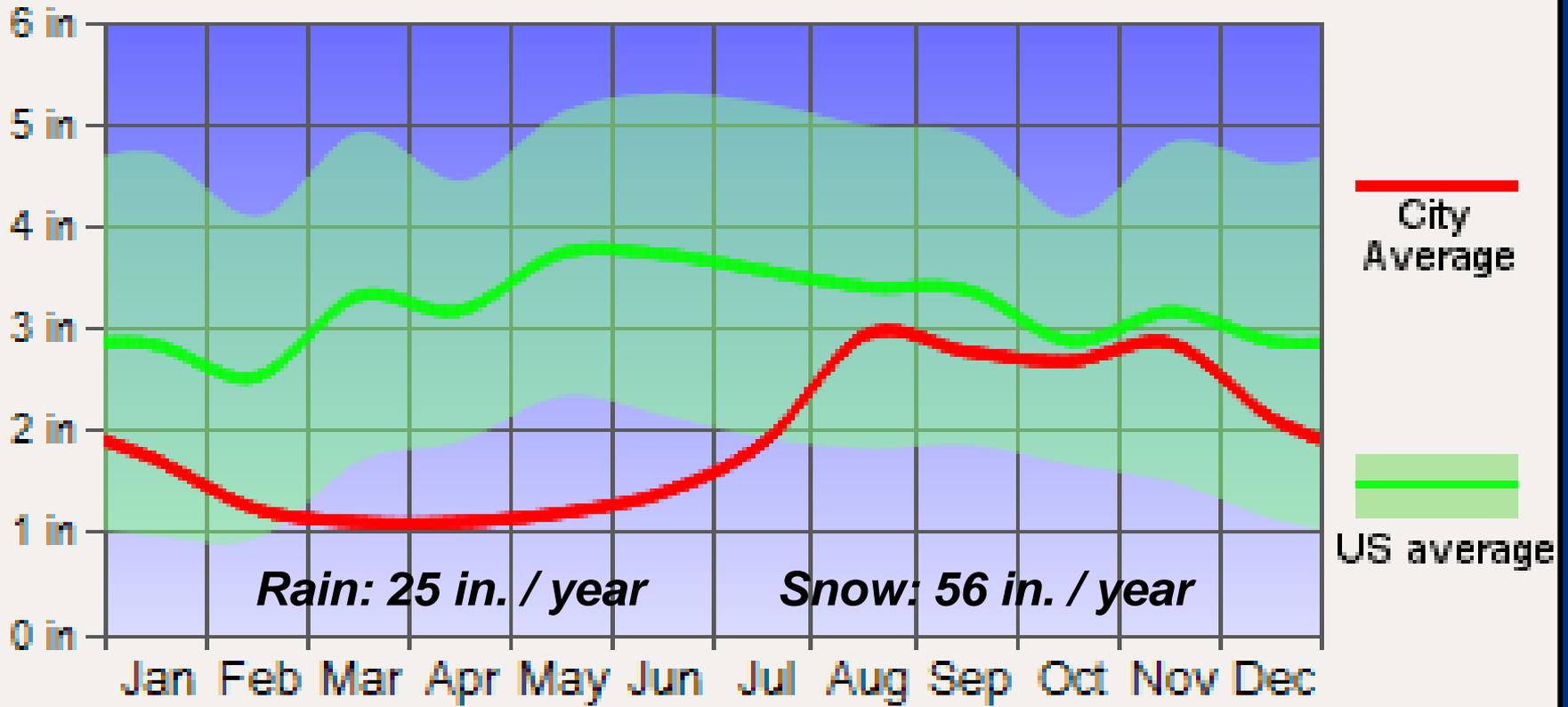
Average Temperatures





St. Paul Weather

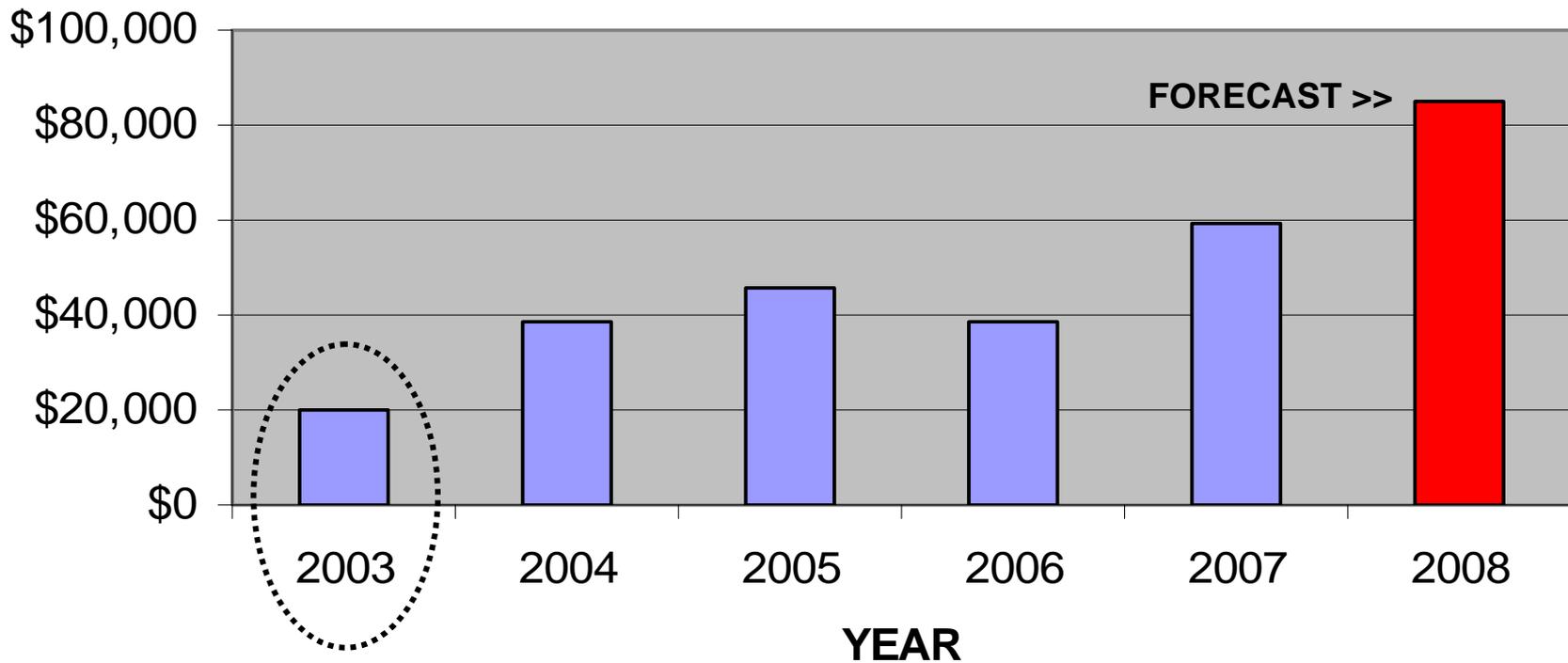
Precipitation





Energy/Fuel Costs

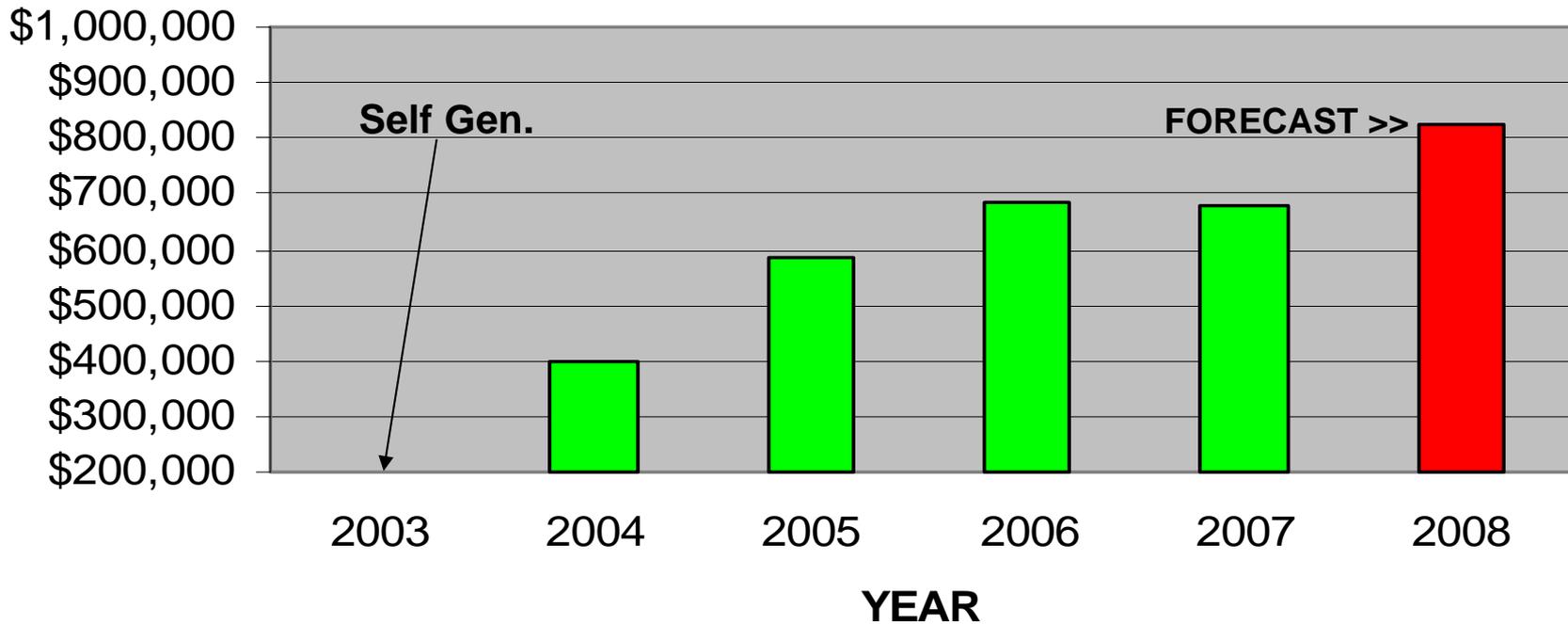
Cost of Fuel Oil for LORSTA St. Paul





Energy/Fuel Costs

Cost of Electricity for LORSTA St. Paul





LORSTA Power History

- Self-Generation until 2003
- Converted to City Power at 25¢/kWh (Ten year Contract)
- Now approaching 72¢/kWh
- Fuels: Heating, Vehicles and Emergency Power
- On-Site Power Gen. Capacity Of 2.2MW



City Power Plant

- **6 Gen. Sets**
 - Various size and age
- **Full: 3.4MW**
- **Norm: 2.8MW**





City Power Plant





LORSTA Power Future

- Tanadgusix Corp. (TDX)
- First Wind Turbine in 1999
- 225 kW
- Hybrid Diesel System





LORSTA Power Future

- Two added in 2005
- 3 X 225kW
- $\frac{3}{4}$ mile from LORSTA
- Total Cap. = 2.9MW**

** Including On-Site Diesel





LORSTA Proposed DSM

- Heating System Upgrades
 - Controls, T'Stats and Setbacks
 - Insulation
 - OSA Deficiencies
- Refrigeration
- Lighting Upgrades and Controls
- Plug Loads (TV's, etc.)
- Manage Building Inventory

CATEGORY	BASELINE	REDUCED TO:	SAVINGS
Lighting	\$257,300	\$91,400	\$165,900
Heating	\$65,000	\$35,000	\$30,000
Refrigeration	\$122,400	74,300	\$48,100
Plug Loads (TV, etc.)	\$102,500	\$63,000	\$39,500
Based on 2007 Rates		Total Potential	\$283,500





Energy Challenges

Space
Heaters

Insulation
(Almost)

Beverages





LORSTA – Supply Side

- TDX vs. City of St. Paul
 - *“How Much of the Pie?”*
 - *City Revenues!!*
 - *Politics!*
- Diesel Fuel: Volume and Delivery
- Wind Power (hybrid)
- BioMass and BioJunk:
 - Incineration / Gasification / Waste-to-Energy



Conclusion

- Basic DSM Projects: \$283, 000 savings
- Supply Side Projects: TBD
- Connect to Wind Power: TBD
 - Work with TDX, City and State Agencies
- Deal with Bio-Junk: TBD



For More Information

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Don't forget to fill out and drop off your session evaluations!

Thank You!



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