

SpaceX: Boca Chica, Tx

Overview, Successes, and Challenges

Small, Eco-Friendly Footprint

- Minimal launch rate (~1 per month) with each launch being audible for < 3 minutes
- Minimal infrastructure:
 - Actual construction takes place on < 5 acres and the entire land parcel is < 50 acres
 - Surrounding area is left untouched and, like Cape Canaveral, provides for an excellent wildlife habitat
 - The site will likely be powered through solar panels/batteries
- Clean fuel
 - Liquid oxygen and RP1 (Rocket propellant is cleaner and better refined than jet fuel)
 - Toxic propellants are not used on launch vehicle (unlike many other LV's)
- Have great relationships with environmental groups at Vandenberg, Cape Canaveral, and Kwajalein, all of which are on or adjacent to environmental preserves/habitats.
- No federally designated historical or archeological sites on the proposed land (unlike for Spaceport America in New Mexico)
- Founder Elon Musk
 - Also owns Tesla (electric car company) and Solar City (solar panel install company)



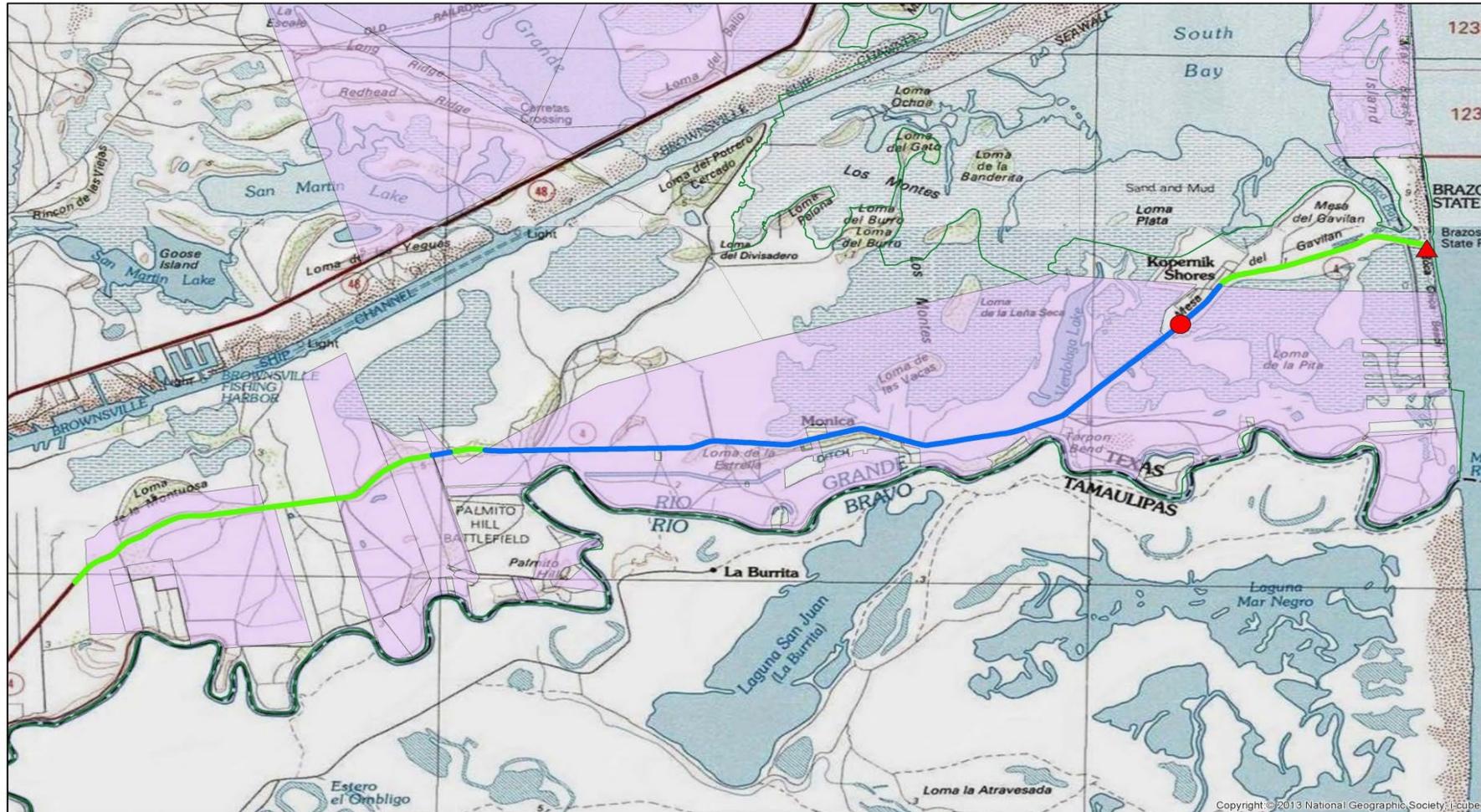
Caption: Osprey perched outside SpaceX's integration hanger at the Cape Canaveral launch site. SpaceX's facility will not include the massive launch infrastructure seen in the background.

SpaceX Boca Chica and Refuge Tracts



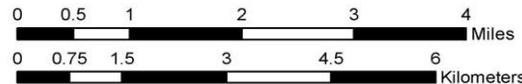
U.S. Fish & Wildlife Service

LOWER RIO GRANDE VALLEY NATIONAL WILDLIFE REFUGE
Cameron, Hidalgo, Starr & Willacy Counties, Texas



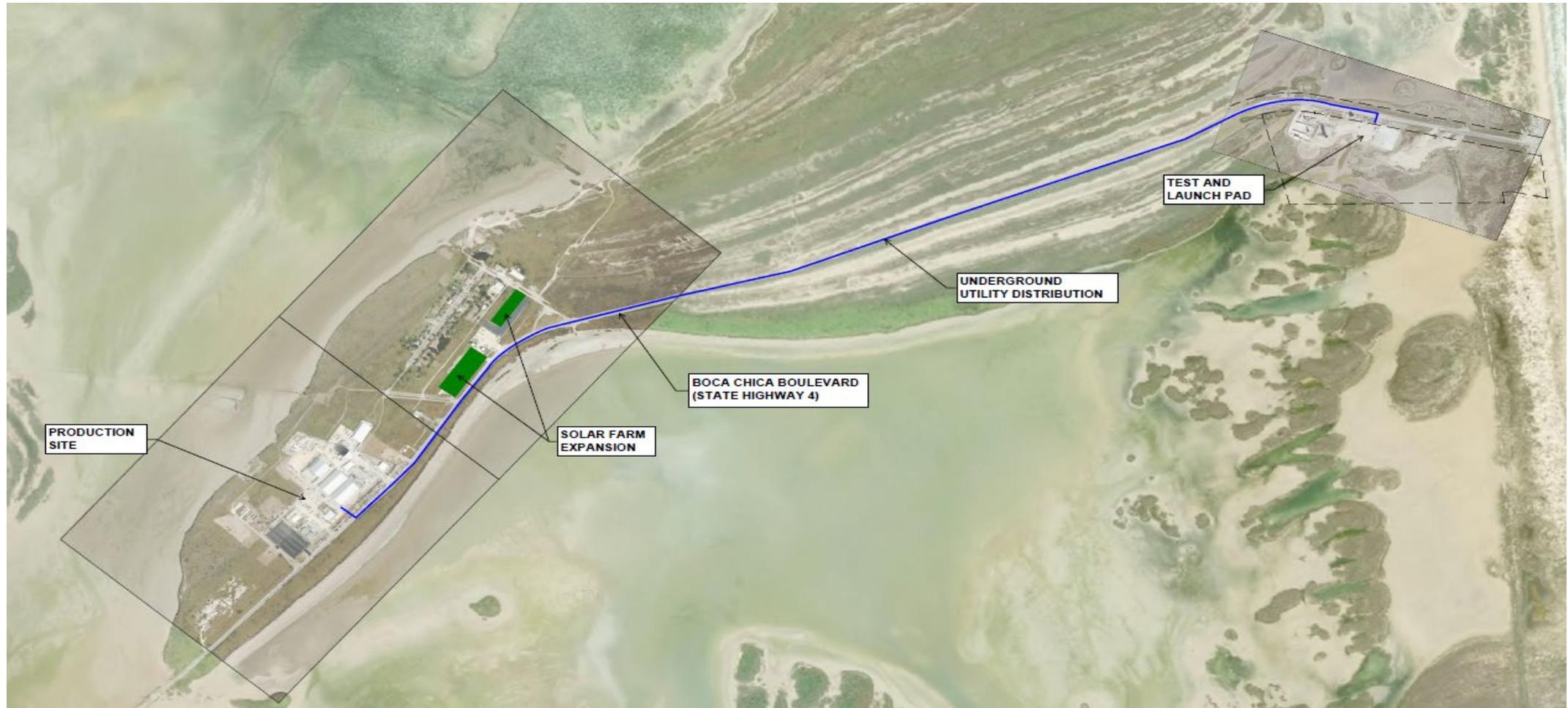
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PRODUCED IN THE DIVISION OF REALTY
ALBUQUERQUE, NM
LAND STATUS CURRENT TO: 5/5/13
MAP DATE: 9/30/2016
BASEMAP: ESRI / DOE RENEWABLE ENERGY ATLAS
WEB MERCATOR PROJECTION
NAD 83
16_0096_3



- ▲ Launch Site
- Control Site
- Refuge ROW
- TX DOT ROW
- Aquired

SpaceX Boca Chica Layout: 78-acre manufacturing site, 60-acre SpaceX Boca Chica Village, 50-acre Launch Area (VLA)



Current Operations

- SpaceX remains committed in its mission to colonize Mars. To achieve this mission, SpaceX is developing a new rocket called the Starship/Super Heavy. A key part of the mission is developing the Starship spacecraft.
- SpaceX is using the Texas Launch Site as a site to conduct the experimental **test program** of the Starship—which would serve as the second stage of the future rocket. The objective of the experimental **test program** is to perform static fires and hops from just a few inches to up to suborbital space flight.



Anomalies and Debris

- Since the SpaceX facility at Boca Chica tests experimental vehicles, mishaps have resulted in large chunks of metal debris and concrete chunks adversely affecting the surrounding wind tidal flats and beaches that are home to federally listed species.
- Since 2020, six major anomalies that resulted in explosions or destruction sent metal and concrete debris flying out over the sensitive tidal wind flats (SN8, SN9, SN10, SN11, Static Fire Test Nov 14, 2022, and SN24), in addition to brushfires from two other static fire tests.



Massey Test Site

- The Massey Test Site is another facility that SpaceX is using to test its vehicles. This facility is completely surrounded by the Boca Chica Tract and the only road leading to it, crosses the Refuge.



Proposed and other Planned Construction Activities

SpaceX plans to further expand and develop the SpaceX Launch Site, including the Vertical Launch Area (VLA) and the existing solar farm.

- Items include:
 - Expansion of the VLA from the current construction boundary to the parcel boundary
 - An additional launch pad and retention basins
 - Second Launch Pad
 - 70-acre residential area (May be on hold)
 - 91-acre inholding to use as a nature viewing area
 - Expansion of State Highway 4
 - May include water/sewer lines within State Highway 4 ROW

Challenges

- SpaceX conducts operational and construction activities, essentially 24/7, which creates continual disturbances to Refuge wildlife and their habitats.
- SpaceX footprint expansions and activities outpace regulatory capability for multiple regulatory agencies.
- SpaceX plans frequently change without notification to the Service, which further constrains timelines and trust.
- SpaceX has support at local, state, and federal levels which continually compels the Service to expedite our regulatory requirements.
- SpaceX has an unrealistic expectation that the Service can move at the same pace as their timeline.

Successes

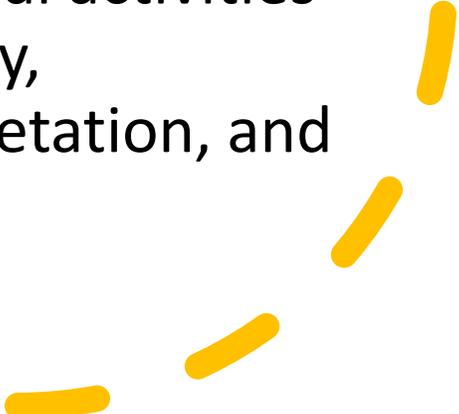
- Agreement for development of an MOU for SpaceX to conduct road maintenance of Massey Road in coordination with the Refuge.
- SpaceX installed cable and bollard fences along Massey Road and at Starbase to prevent encroachment onto Refuge property.
- Working to improve frequent communication between both parties to reestablish trust.
- SpaceX has partnered with the Refuge to establish an interpretive kiosk near Starbase.
- SpaceX has assisted the Refuge in NEPA compliance.



One Win, One Goal

The overall goal for the Refuge would be to establish a mutually beneficial relationship with SpaceX. This means SpaceX partnering with the Refuge to continue to protect the Boca Chica area tracts and its unique fish and wildlife resources.

Our management objectives for this area are for the recovery of federally-listed species (aplomado falcon, piping and snowy plovers, red knot, ocelot, and sea turtles) while continuing to offer quality wildlife-dependent recreational activities (wildlife observation and photography, environmental education and interpretation, and fishing) to the public.



Questions?

