

**LETTER OF INTENT FOR *COMMERCIAL SPACE ENTITY* TO PROVIDE
INFORMATION RELATED TO [LAUNCH AND REENTRY
OPERATIONS] [AND] [LAUNCH AND REENTRY SITE OPERATIONS]
TO THE UNITED STATES COAST GUARD *RELEVANT AREA AND
APPROPRIATE COAST GUARD DISTRICT* TO ENSURE SAFETY OF THE
MARITIME DOMAIN**

1) BACKGROUND.

- a) 14 C.F.R. Chapter III requires Commercial Space Operators to coordinate with the U.S. Coast Guard to establish procedures for the issuance of a Notice to Mariners and any other measures the Coast Guard deems necessary to protect public health and safety, prior to any launch or reentry activity licensed by the FAA that overflies or affects Navigable Waters. The U.S. Coast Guard's authority to regulate Navigation and Navigable Waters is implemented in 33 C.F.R. Chapter I.
- b) [Commercial Space Entity] has applied for a [license/permit] from the FAA to [conduct a launch / reentry or operate a launch / reentry site] at [location] under 14 CFR [insert applicable part]. *Briefly describe operations, nexus with USCG, and USCG Districts affected.*

2) PURPOSE. This Letter of Intent is in response to a request made to the U.S. Coast Guard *Relevant Area* from *Commercial Space Entity* to establish procedures for issuance of Notices to Mariners [Optional: and provide resources in support of its operations [currently planned for] [on or about] [date] from [location],] including launch, reentry, and recovery efforts involving a [rocket type] that may affect the safety and security of the maritime domain]. The U.S. Coast Guard intends to exercise its statutory authorities and responsibilities to safeguard the maritime transportation system, public safety, and marine environment with regard to these activities, and consistent with its statutory authority, will issue Notices to Mariners in its discretion. This Letter of Intent does not address Air Traffic Control procedures, nor does it cover other notifications required for launch operations.

3) SCOPE. The information contained herein establishes Coast Guard *Relevant Area's* intent to issue Notices to Mariners in its discretion and monitor *Commercial Space Entity's launch/reentry* operations activity within the *Relevant Area's* area of responsibility to ensure safety and security of the maritime domain. The U.S. Coast Guard's intent is specific to the locations and proposed operations of the subject *launch/reentry* areas and is designed to establish Coast Guard conditions and coordination procedures for *launch/reentry* operations.

4) ABBREVIATIONS & DEFINITIONS.

a) Abbreviations:

- | | |
|-----------|---|
| i) AST | Office of Commercial Space Transportation |
| ii) BNM | Broadcast Notice to Mariners |
| iii) COTP | Coast Guard Captain of the Port |
| iv) FAA | Federal Aviation Administration |
| v) GMT | Greenwich Mean Time |

vi)	LAA	Limited Access Area
vii)	LNM	Local Notice to Mariners
viii)	NAVTEX	NAVigation TELeX
ix)	NGA	National Geospatial-Intelligence Agency
x)	NSRA	Navigation Safety Risk Assessment
xi)	RLV	Reusable Launch Vehicle

b) Definitions:

- i) Captain of the Port (COTP): Captains of the Port and their representatives enforce, within their respective areas, port safety and security and marine environmental protection regulations. These regulations include, without limitation, the following: the protection and security of vessels, harbors, and waterfront facilities; anchorages; security zones; safety zones; regulated navigation areas; deep water ports; water pollution; and ports and waterways safety.
- ii) Limited Access Area (LAA): Tool used to control movement of marine traffic and limit access to all or a portion of the waterway to provide safety and security for mariners, vessels, and maritime critical infrastructure, and manage the use of navigable waterways for commerce and environmental protection. LAAs could be a tool used to mitigate risks identified through a Navigation Safety Risk Assessment (NSRA).
- iii) U.S. Coast Guard District: A Coast Guard District Commander is in command of a Coast Guard District and the District Commander’s office may be referred to as a Coast Guard District Office. For the purposes of this letter of intent, the “Local U.S. Coast Guard District” refers to the *Relevant USCG District(s) and location (City, State)*.
- iv) Navigation Safety Risk Assessment (NSRA): Tool used by the COTP when preparing input for the permitting agency regarding port or waterway safety issues associated with a project located on, over, or near the navigable waters of the United States. The assessment helps the COTP identify potential navigation risks and is the basis of any recommendation to the permitting agency.
- v) Navigable Waters of the United States (navigable waterway): Navigable Waters refers to the territorial seas of the United States (all waters seaward of the baseline to 12 nautical miles (NM)); internal waters of the United States that are subject to tidal influence; internal waters of the United States not subject to tidal influence, but that are or have been used, are or have been susceptible for use, as highways for substantial interstate or foreign commerce, have been determined by a governmental or non-governmental body, having expertise in waterway improvement, that they are capable of improvement to constitute highways for substantial interstate or foreign commerce; and other waters over which the Federal Government may exercise Constitutional authority. *See 33 C.F.R. § 2.36(a)*.
- vi) NAVTEX: The International Maritime Organization has designated NAVTEX as the primary means for transmitting coastal urgent marine safety information to ships worldwide. In the United States, NAVTEX is broadcasted from Coast Guard facilities. NAVTEX is part of the Global Maritime Distress and Safety System, which has been incorporated into the International Convention for the Safety of Life at Sea, 1974, to which the United States is a party. All NAVTEX broadcasts are made on 518 kHz, using narrow-band direct printing 7-unit forward error correcting transmission.

vii) Notice to Mariners:

- (a) Broadcast Notice to Mariners (BNM): Broadcast Notice to Mariners is the method by which important navigation safety information is disseminated in the most expedient manner. Two agencies within the United States, the U.S. Coast Guard and the National Geospatial-Intelligence Agency (NGA), are responsible for broadcasting navigation information. Each agency has a particular geographic area of responsibility.
 - (i) USCG: Broadcast Notice to Mariners are issued via voice and NAVTEX. As a general rule, VHF-FM voice broadcasts will contain all information that applies to inland waters and seaward to 20 nautical miles. Medium frequency (MF) broadcasts (out to 100 nautical miles) and high frequency (HF) broadcasts (out to 200 nautical miles), delivered via NAVTEX, duplicate the VHF-FM broadcasts.
 - (ii) NGA: In support of the Global Maritime Distress and Safety System (GMDSS), NGA Broadcast Warnings are promulgated by the Worldwide Navigational Warnings Service (WWNWS) to provide rapid dissemination of information critical to navigation and the safety of life at sea. Navigational Warnings are issued regularly and contain information about persons in distress, or objects and events that pose an immediate hazard to navigation. NGA broadcasts contain information that concerns ocean waters beyond approximately 150 nautical miles from shore.
 - (b) Local Notice to Mariners: The Local Notice to Mariners is the Coast Guard's primary means for disseminating navigation safety information concerning aids to navigation, hazards to navigation, and other items of interest to mariners navigating the waters of the United States, its territories, and possessions. Each District Commander is responsible for issuing a Local Notice to Mariners each week containing information that contributes to navigation safety and maritime security within the boundaries of the District.
 - (c) Notice to Mariners: The Notice to Mariners is published weekly by the NGA and prepared jointly by the USCG, National Ocean Service, and the NGA. It is intended to advise mariners of new hydrographic discoveries, changes in channels and navigational aids, and information concerning the safety of navigation. It also contains information to update charts and publications, information from Local Notices to Mariners published by USCG districts, and information compiled from foreign notices to mariners, ship reports, and similar cooperating observer reports.
- viii) [Reusable Launch Vehicles: Reusable Launch Vehicle (RLV) means a launch vehicle that is designed to return to Earth substantially intact and therefore, may be launched more than one time or that contains vehicle stages that may be recovered by a launch operator for future use in the operation of a substantially similar launch vehicle.] [Launch vehicle means a vehicle built to operate in, or place a payload in, outer space or a suborbital rocket.] [Reentry vehicle means a vehicle designed to return from Earth orbit or outer space to Earth substantially intact. A reusable launch vehicle that is designed to return from Earth orbit or outer space to Earth substantially intact is a reentry vehicle.] [Expendable launch vehicle means a launch vehicle whose propulsive stages are flown only once.]
- ix) *USCG Relevant Area*: Refers to the Commander of the *Relevant Area* and responsible for determining when operational matters require the coordination of forces and facilities of more than one Coast Guard District. The geographic boundary for the *Relevant Area* is

available at 33 C.F.R. Subpart 3.04. The Relevant Area Commander provides operational oversight of USCG Districts **XX**, **XX**, **XX**, **XX**, and **XX** for the purposes of this LOI.

5) **Commercial Space Entity Requirements.** **Commercial Space Entity** will:

- a) Operations Plans: **Commercial Space Entity** will provide current copies of the following plans to the Coast Guard:
 - i) Ship Hazard Area or Restricted Hazard Area, as defined through Range Commanders Council, Common Risk Criteria Standards for National Test Ranges 321, section 3.4. This includes a Ship Hazard Area/Restricted Hazard Area diagram describing the projected impact area of debris fragments (shown in Appendix *list appendices*);
 - ii) Mishap Plan that includes all information to facilitate the immediate notification of primary points of contact listed in Section 7 and Appendix A, in the event of a launch or reentry site accident over or adjacent to navigable waters, and/or within the Coast Guard District areas of responsibility.
- b) Response Plans: **Commercial Space Entity** will provide current copies of a Response Plan to **Coast Guard Relevant Area** Prevention Operations Planning Branch, and *list Relevant USCG Districts Waterways Management Branches*. This Response Plan will include the procedures necessary to contain, minimize the adverse effects of, and respond to the foreseeable consequences of a mishap, as such term is defined in 14 C.F.R. § 401.7, occurring in the conduct of the [launch and/or reentry] reentry accident, reentry incident, or other mishap, as such terms are defined in 14 C.F.R. § 401.5, occurring in the conduct of an FAA-licensed activity, and at a minimum, will include procedures to mitigate hazards to public health and safety, and the contamination of waterways and adjacent coastline.
- c) Scheduling and Notification Activities:
 - i) **Commercial Space Entity** will annually provide the **Relevant Area Commander** a launch and reentry schedule forecast for the fiscal year, as it is known at the time, by 30 September.
 - ii) **Commercial Space Entity** will provide, to the extent reasonably practicable, not less than 10 business days of advance notice of the launch and reentry schedule.
 - iii) (R-30 days) **Commercial Space Entity** will submit reentry information, where applicable, at least 30 days prior to scheduled reentry or as soon as practicable for contingency reentry.
 - (a) **Commercial Space Entity** will provide this reentry information to:
 - (i) **Relevant Area** Prevention Operations Planning Branch;
 - (ii) **Relevant District** Waterways Management Branch(es), who will request an LNM article via *list Relevant Districts' LNM email addresses*; and
 - (iii) **Relevant Sector** Waterways Management Division(s).
 - (b) Reentry information should include the following:
 - (i) Mission Designator;

- (ii) Vehicle type and reentry description;
 - (iii) Primary, secondary, and contingency reentry dates and times in GMT;
 - (iv) Restricted Hazard Area perimeter coordinates in degrees, minutes, and seconds to three decimal places, if applicable.
 - (v) Recovery Officer contact information.
- iv) (NLT T-72 hours) *Commercial Space Entity* will contact the following:
- (a) Relevant Sector Level: *Relevant Sector* Waterways Management Divisions and Sector Command Centers, to request issuance of a Broadcast Notice to Mariners (BNM) to provide [launch] [reentry] information and any other specific information needed by mariners. This communication is important because it will, subject to the discretion of the Coast Guard Captain of the Port, result in the Coast Guard issuing a NAVTEX broadcast;
 - (b) Relevant District Level:
 - (i) *Relevant District* Waterways Management Branch(es) to confirm reentry information for the LNM;
 - (ii) District Command Center(s), to ensure general awareness and monitoring and to trigger LNM issuance, at the discretion of the District Commander, for [launch] [reentry] activities occurring within 150 miles from shore;
 - (c) NGA may issue Navigation Area XII or HYDROPAC warning notifications for launch/reentry activities occurring over water seaward of 150 nautical miles offshore. Reentry information should be sent to navsafety@nga.mil and may also be relayed via voice at (571) 557-5455.
 - (d) *Chain of communications*: *Commercial Space Entity* will inform the *Relevant Area's* Prevention Operations Planning Branch of all communications with an engaged District (dpw) and will inform the relevant District of all communications with an engaged Sector.
- d) Limited Access Area (LAA) activation, coordination and enforcement: *Describe LAA activation, coordination and enforcement. If no LAAs are required, input "The Coast Guard Operational Commander has determined that no LAAs are required for safe operation for this event."*

6) Coast Guard Intent.

- a) Upon receipt of the information relating to any launch, reentry, or recovery operation from *Commercial Space Entity*, Coast Guard *Relevant Area* intends to:
 - i) Assess the information received for potential effects in or to the maritime domain;
 - ii) Discuss the information received with relevant Districts and Sectors to allow local Coast Guard leaders to make a risk-based assessment of the need for resources;

- iii) Conduct a risk assessment to determine what, if any, assets are appropriate to ensure public safety and that commerce is not adversely affected by the launch, reentry, or recovery;
 - iv) Issue appropriate public advisories, such as Notices to Mariners (e.g. LNM and BNM), for *Commercial Space Entity* launches, reentries, and recoveries; and
 - v) Communicate Coast Guard actions in response to *Commercial Space Entity's* planned recovery operations to *Commercial Space Entity* and other stakeholders, as appropriate.
 - vi) Limitations: The Coast Guard cannot commit a specific number or type of asset(s) because of the dynamic nature of Coast Guard operations, the potential for competing missions, and vessel or personnel limitations. Upon notification of an imminent [launch] [reentry], the Coast Guard will determine asset availability based on factors that include, but are not limited to, the following: whether the spacecraft is crewed and by whom, weather and sea state at the splashdown location, competing or ongoing missions, potential hazards to Coast Guard personnel and the public, anticipated public presence at the splashdown location, and the presence of private resources arranged for the operation.
- b) Coast Guard District(s) *list relevant USCG Districts* Waterways Management Branches intend to engage in the following scheduling and notification activities:
- i) Receive and review annual forecast of scheduled [launches] [reentries] provided by *Commercial Space Entity*;
 - ii) Endeavor to publish [launch] [reentry] information at least 15 days prior to [launch] [reentry] in the Local Notice to Mariners, at the discretion of the operational commander and subject to operational limitations;
 - iii) Fulfill any other statutory responsibility pertaining to USCG jurisdiction and authorities, subject to the discretion of the *Relevant District Commander*;
 - iv) Consult with *Commercial Space Entity* on all matters related to navigation safety pertaining to space transportation, as appropriate.
- c) Nothing in this letter prevents Coast Guard Area, District, Sector, or local unit commanders from exercising their discretion to take necessary action, consistent with law and regulation, to protect the safety and security of lives and property in areas and aboard vessels in which the Coast Guard may exert jurisdiction.
- 7) **POINTS OF CONTACT.** The primary points of contact for this Letter of Intent will be the Chief, Prevention Operations Planning Branch (PAC/LANT-54) of *Coast Guard Relevant Area*, *list relevant USCG Districts* Waterways Management Branches, Coast Guard Sectors *list relevant USCG Sectors* Waterways Management Branches, and *Commercial Space Entity's primary contact*. Contact details are in Appendix A.
- 8) **OTHER PROVISIONS.**
- a) *Commercial Space Entity* will immediately notify the Coast Guard in the event it is unable to fulfill any of the requirements covered by this Letter.

- b) This Letter represents the entire intent of the Coast Guard and supersedes any prior letters, arrangements, or agreements between the Coast Guard and *Commercial Space Entity* with respect to the subject matters referenced in this Letter.
- c) No provision of this Letter of Intent should be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. Furthermore, no provision of this Letter of Intent is intended to conflict with current law or regulation or the directives of the U. S. Coast Guard or Department of Homeland Security. If a term of this Letter is inconsistent with such authority, then that term shall be invalid, and is severable from the rest of this Letter.

ISSUED BY:

 VADM _____
 Commander, Coast Guard Relevant Area

 Date

ACKNOWLEDGED BY:

Commercial Space Entity's Signature Authority
Title, Commercial Space Entity

 Date

- Appendix (A) Specific Points of Contact
- Appendix (B) Restricted Hazard Areas
- Appendix (C) Coast Guard District/COTP Zones
- Appendix (D) Composite Restricted Hazard Area Maps

LETTER OF INTENT

Appendix A – Primary Points of Contact (include all relevant Sector, District, and Area contacts)

OFFICE	NUMBER	RESPONSIBILITY
<i>Commercial Space Entity's Primary Contact</i> Office/Department Email address	xxx-xxx-xxxx	<i>Input responsibility.</i>
<i>Commercial Space Entity's Recovery Officer</i> Recovery Officer Email address	xxx-xxx-xxxx	<i>Input responsibility.</i>
Coast Guard Relevant Area Prevention Operations Planning Branch Shared Email@uscg.mil	xxx-xxx-xxxx	Chief, Prevention Ops Planning Branch
Coast Guard District XXXX Waterways Management Shared Email@uscg.mil	xxx-xxx-xxxx	Chief, Waterways Management
Coast Guard District XXXX LNM Editor Shared Email@uscg.mil	xxx-xxx-xxxx	Publication of Local Notice to Mariners

LETTER OF INTENT

Appendix B –Restricted Hazard Areas

The following is the *restricted hazard area name* restricted hazard area associated with a *terrestrial landing site name* landing:

INSERT GRAPHICS/IMAGES HERE

*INSERT RESTRICTED HAZARD AREA LATITUDE/LONGITUDE COORDINATES HERE
(INCLUDE DEGREES/MINUTES/SECONDS AND DECIMAL DEGREES FORMAT)*

LETTER OF INTENT

Appendix C – Coast Guard Relevant Area and Restricted Hazard Areas

INSERT GRAPHICS/IMAGES HERE

1. See 33 C.F.R. 3.55 through 33 C.F.R. 3.85 for *Coast Guard Relevant Area/District* boundaries.

LETTER OF INTENT

Appendix D – Composite Restricted Hazard Area Maps

(THIS SECTION MAY NOT BE NEEDED IF ONLY ONE RESTRICTED HAZARD AREA EXISTS)

INSERT GRAPHICS/IMAGES HERE