



## Need to Modernize Nuclear Weapons Delivery Systems

Most U.S. nuclear weapons delivery systems have been extended far beyond their original service lives and cannot be sustained beyond the 2025 to 2035 timeframe. Replacement programs are underway to ensure there are no capability gaps when these legacy systems age-out. However, these programs require significant increased investment for much of the next 20 years and must continue without delay. A delay in funding for replacement systems will adversely impact military operations and undermine the deterrence mission.

### Modernization Programs

- ◆ **Ground-Based Strategic Deterrent (GBSD)** program will replace the nearly 50-year-old Minuteman III Intercontinental Ballistic Missile (ICBM) system. GBSD is in the Technology Maturation and Risk Reduction (TMRR) phase. Initial operating capability (IOC) is planned for FY 2029.
- ◆ **Long-Range Standoff (LRSO)** weapon will replace the nearly 40-year-old AGM-86B Air-Launched Cruise Missile with a missile capable of penetrating defended airspace. LRSO is in the TMRR phase.
- ◆ **COLUMBIA-Class ballistic missile submarines (SSBN)** will replace the nearly 40-year-old OHIO SSBNs. The COLUMBIA program recently completed Milestone B; construction on hull #1 will begin in FY 2021. The first COLUMBIA-class SSBN is scheduled to make its first strategic patrol in FY 2031.
- ◆ **Trident II (D5)** Submarine-Launched Ballistic Missile (SLBM) Life Extension (D5LE) program extends the service life of the D5 missile for deployment on both OHIO and COLUMBIA-Class SSBNs. The D5LE is in Low Rate Initial Production and fielding began in February 2017.
- ◆ **B-21 Raider** bomber will supplement the aging B-2 and B-52 bombers and will have both conventional and nuclear roles. The B-21 program is in the Engineering and Manufacturing Development phase. IOC is planned for the mid-2020s.
- ◆ **F-35A** dual-capable aircraft (DCA) will replace legacy F-15E DCA to support our allies through extended deterrence. The F-35A DCA is scheduled to complete nuclear certification in FY 2024.
- ◆ **Sea-Launched Cruise Missile** will reintroduce a flexible, sea-based, non-strategic nuclear capability to improve U.S. capabilities for deterring limited nuclear use and assuring our allies that we will meet our extended deterrence commitments regardless of adversary actions. Development and fielding timelines are being finalized.

### Cost

Nuclear deterrence is the Department of Defense's number one priority mission and highest investment priority. DoD expects nuclear modernization, including strategic delivery platforms and nuclear command and control systems, to cost approximately 3.7% of the DoD budget during the peak of the 23-year modernization period. Total projected costs for sustainment and modernization of our nuclear forces is approximately 6.4% of the DoD budget in the same time period. By these measures, the cost of these efforts is notably less expensive than in the past—the previous two large nuclear recapitalization efforts required 10.6% of the defense budget in the early 1980s and 17% of the defense budget in the early 1960s.