



NORTH KOREA'S NUCLEAR AND MISSILE ADVANCES

Ian Williams, Associate Director

Fairbanks Industry Update Forum 2017

Alaska Alliance

October 5, 2017

CSIS

CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES

MISSILE DEFENSE
PROJECT

Who We Are:

Established in 2015, the CSIS Missile Defense Project examines a wide range of policy, program, and strategic issues related to missile defense. The project's research considers the most pressing problems of the day, including:

- Missile defense policy and strategy
- Missile defense budgets
- Homeland missile defense
- Integrated air and missile defenses for U.S. forces and allies abroad
- Offensive strike capabilities
- Investments in high technology to defeat missile threats



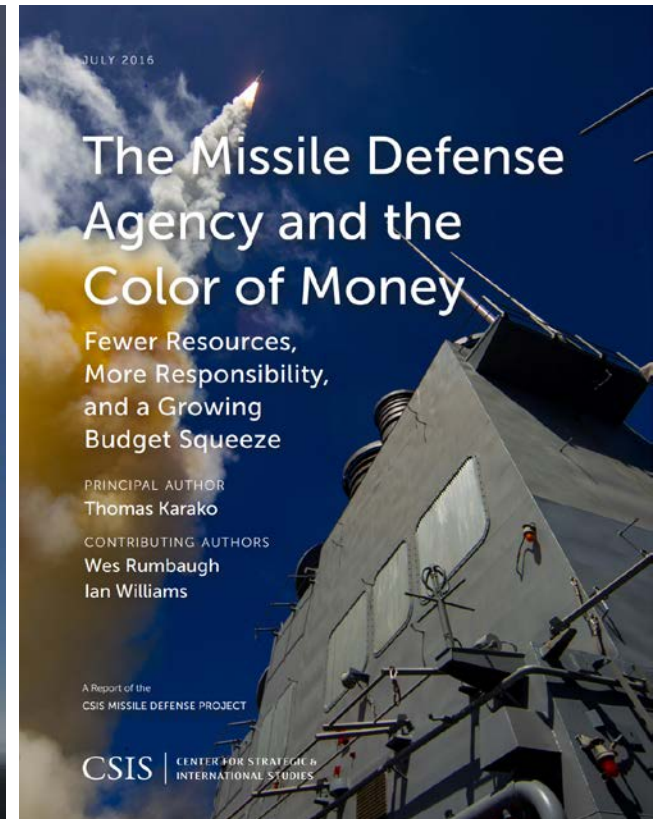
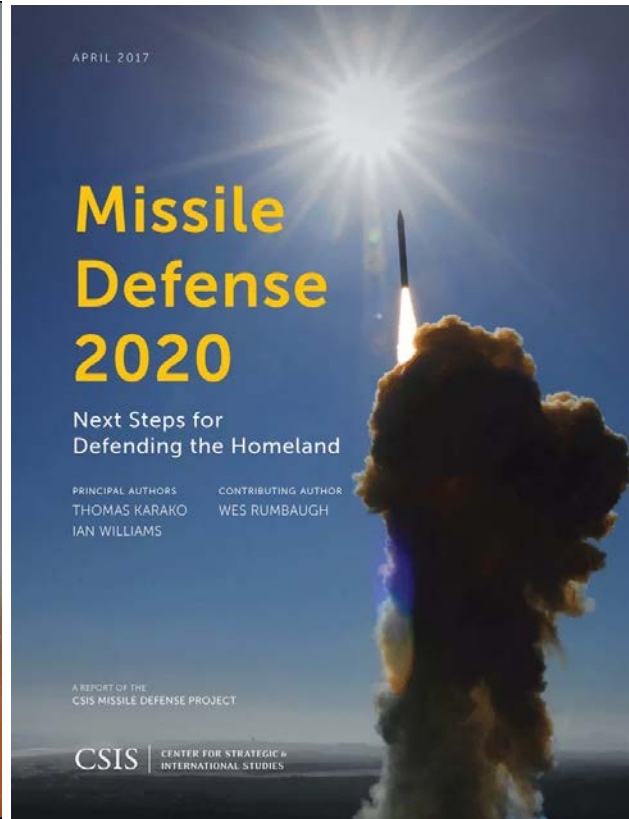
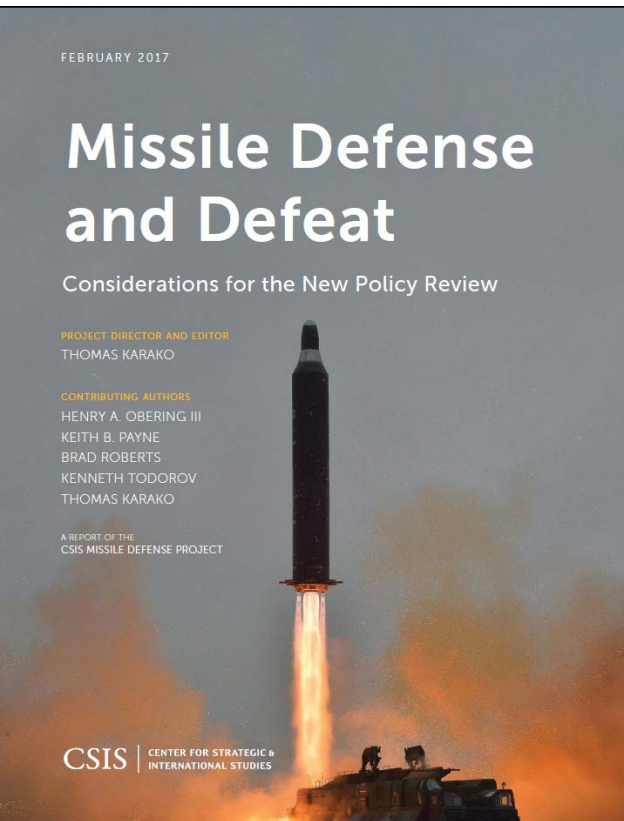
Senator Tom Cotton speaking at “The Russia Challenge in Europe,” a MDP event hosted at CSIS on July 17, 2017.



Senator Dan Sullivan speaking at the public rollout of Missile Defense 2020: Next Steps for Defending the Homeland, April 7, 2017.

Studies and Publications

- 3 major studies since 2015
- 45+ op-eds, chapters, and short reports

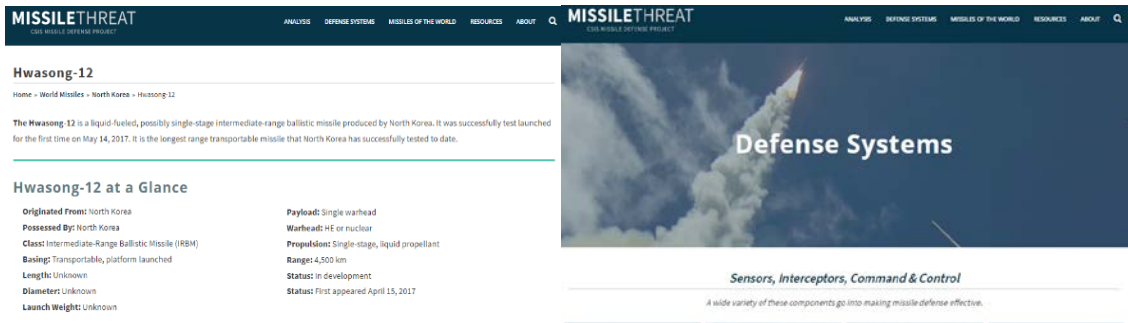
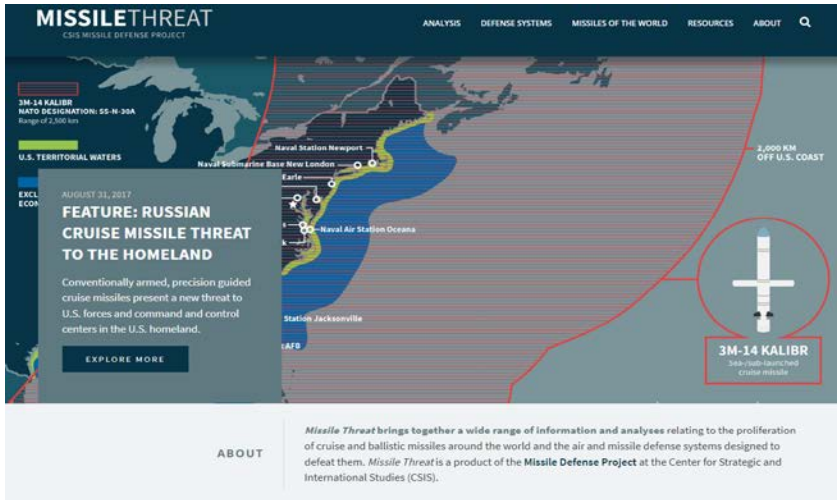


Project Website

MISSILETHREAT

CSIS MISSILE DEFENSE PROJECT

- Site launch in August 2015
- Today, MT is the most trafficked CSIS microsite
- Routinely cited in media, academia, and government reports.
- 465 unique pages of content and multimedia

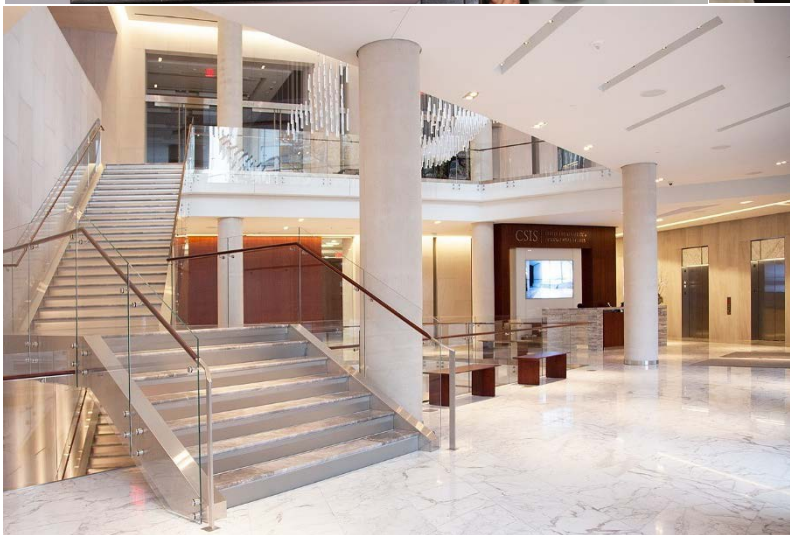


Media Outreach

The Project has placed a high priority of educating the public and media through regular interviews, camera appearances, and providing readily accessible information through the project's website.

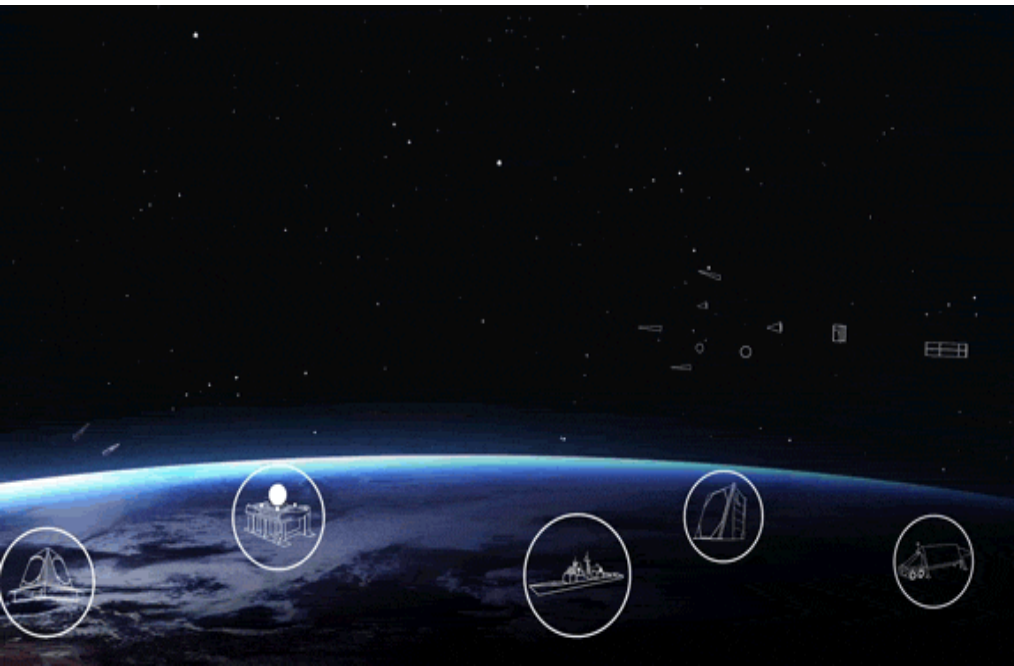


Conferences and Events

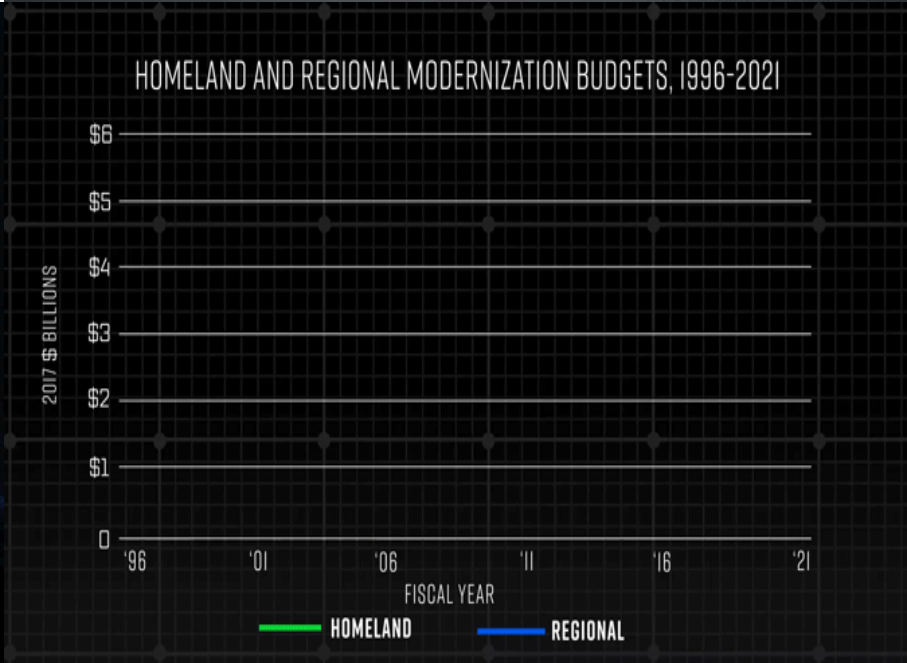


Multimedia

- MDP regularly produces graphics, videos, and other media to educate public on missile defense issues.



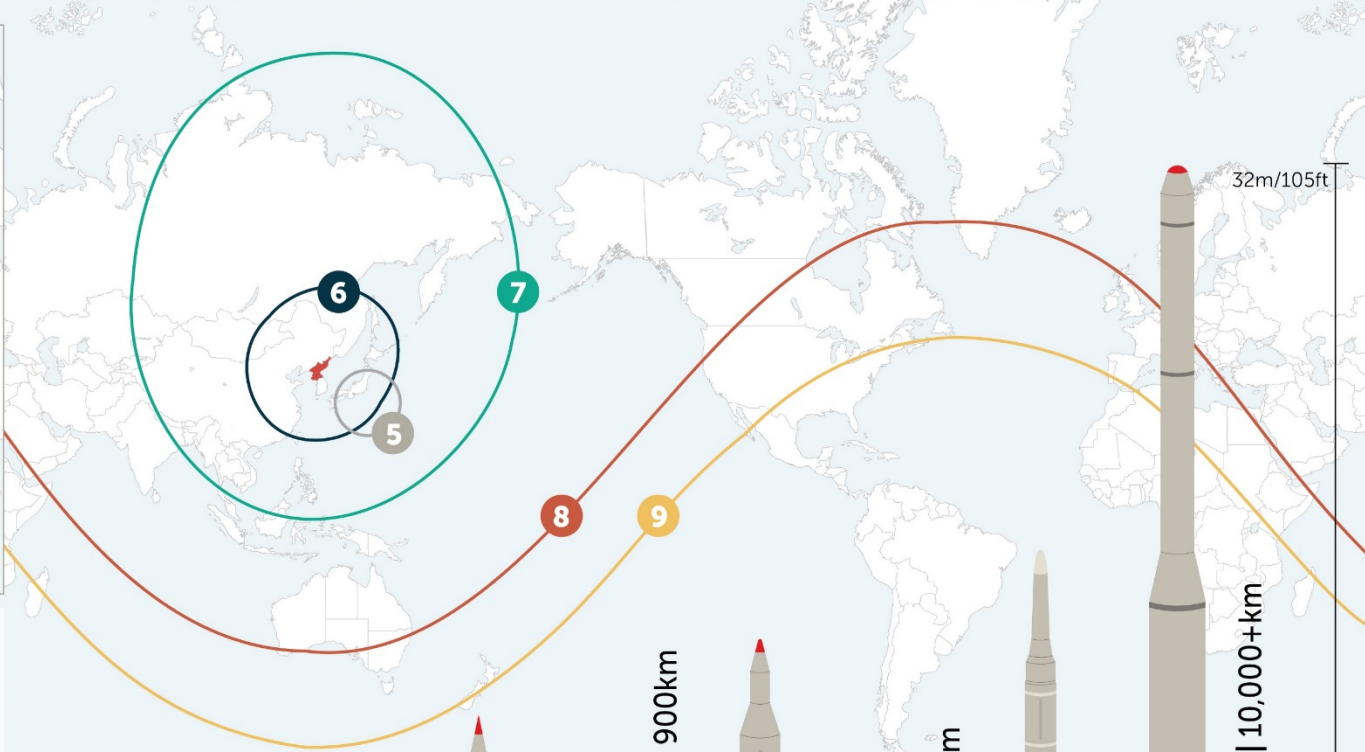
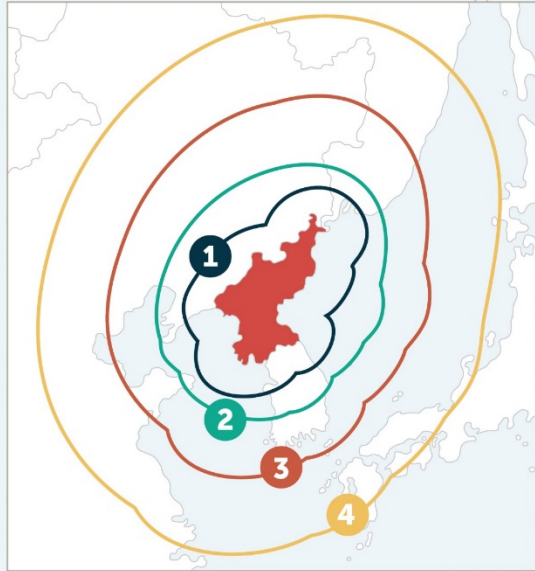
CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES | MISSILE DEFENSE PROJECT



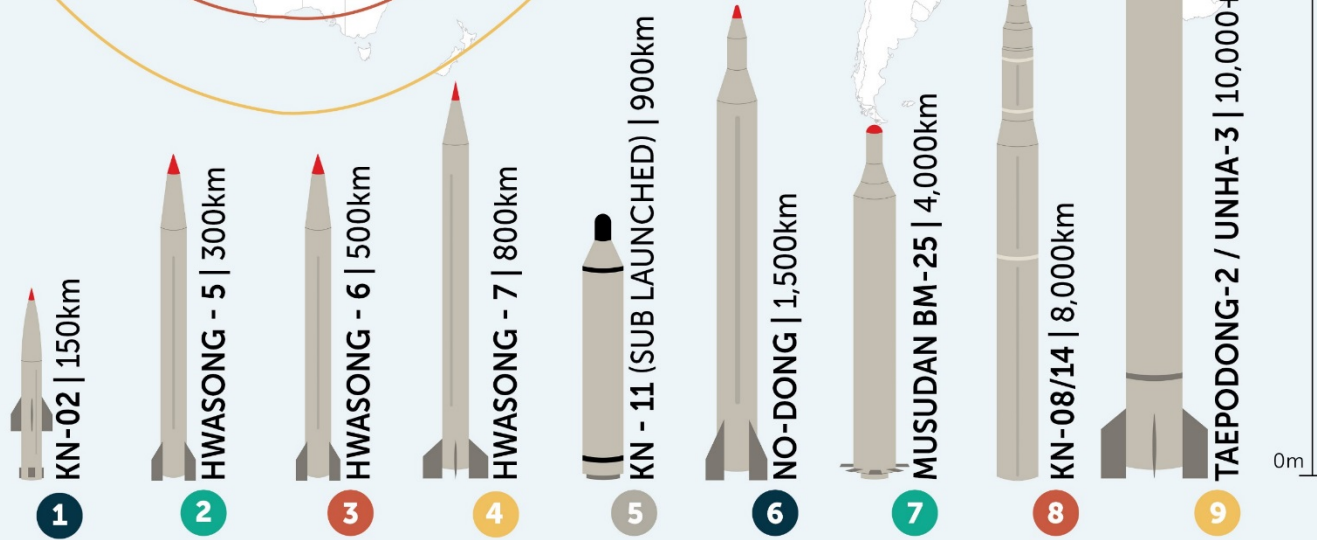
North Korea's Nuclear and Missile Advances



NORTH KOREA'S BALLISTIC MISSILES



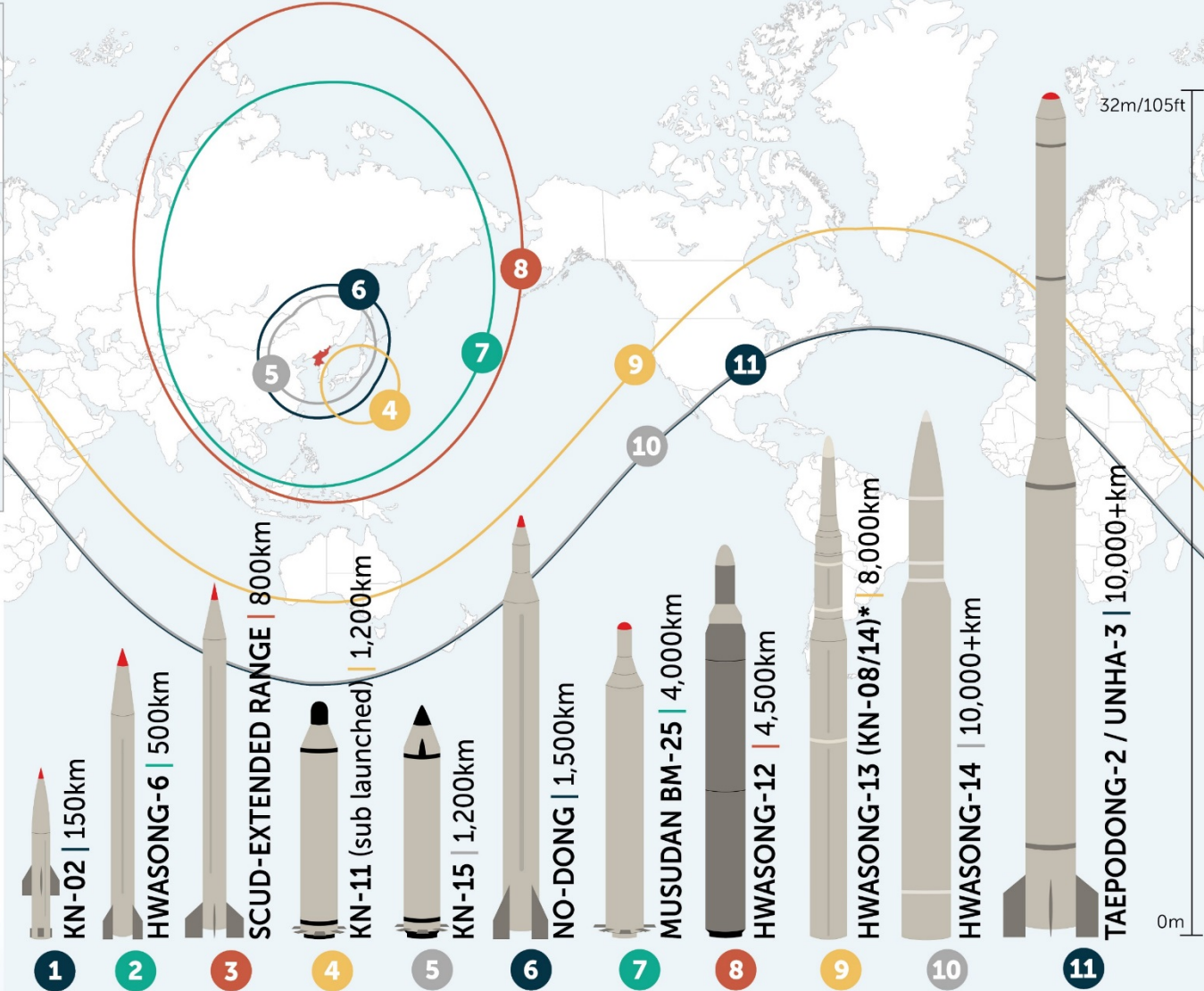
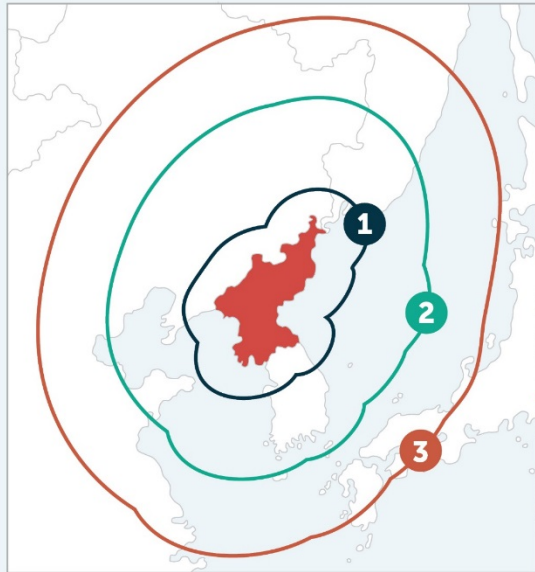
North Korea's ballistic missile program is one of the most rapidly developing threats to global security. In recent years, an unprecedented pace of missile testing has included new and longer range missiles, sea-launches, and the orbiting of satellites. Although the reliability of its longer range systems remains uncertain, North Korea has clearly signaled its intent to have the capability to deliver nuclear weapons to the United States.



December 2016



NORTH KOREA'S BALLISTIC MISSILES



North Korea's ballistic missile program is one of the most rapidly developing threats to global security. In recent years, an unprecedented pace of missile testing has included new and longer range missiles, sea-launches, and the orbiting of satellites. The most notable of these advances is North Korea's development of a new intercontinental ballistic missile, the Hwasong-14, which can likely reach the continental United States.

*Not yet flight tested.

October 2017



Hwasong-12 IRBM

- 4,500 km (2,800 mi) range
 - Guam
 - Okinawa
 - Aleutians

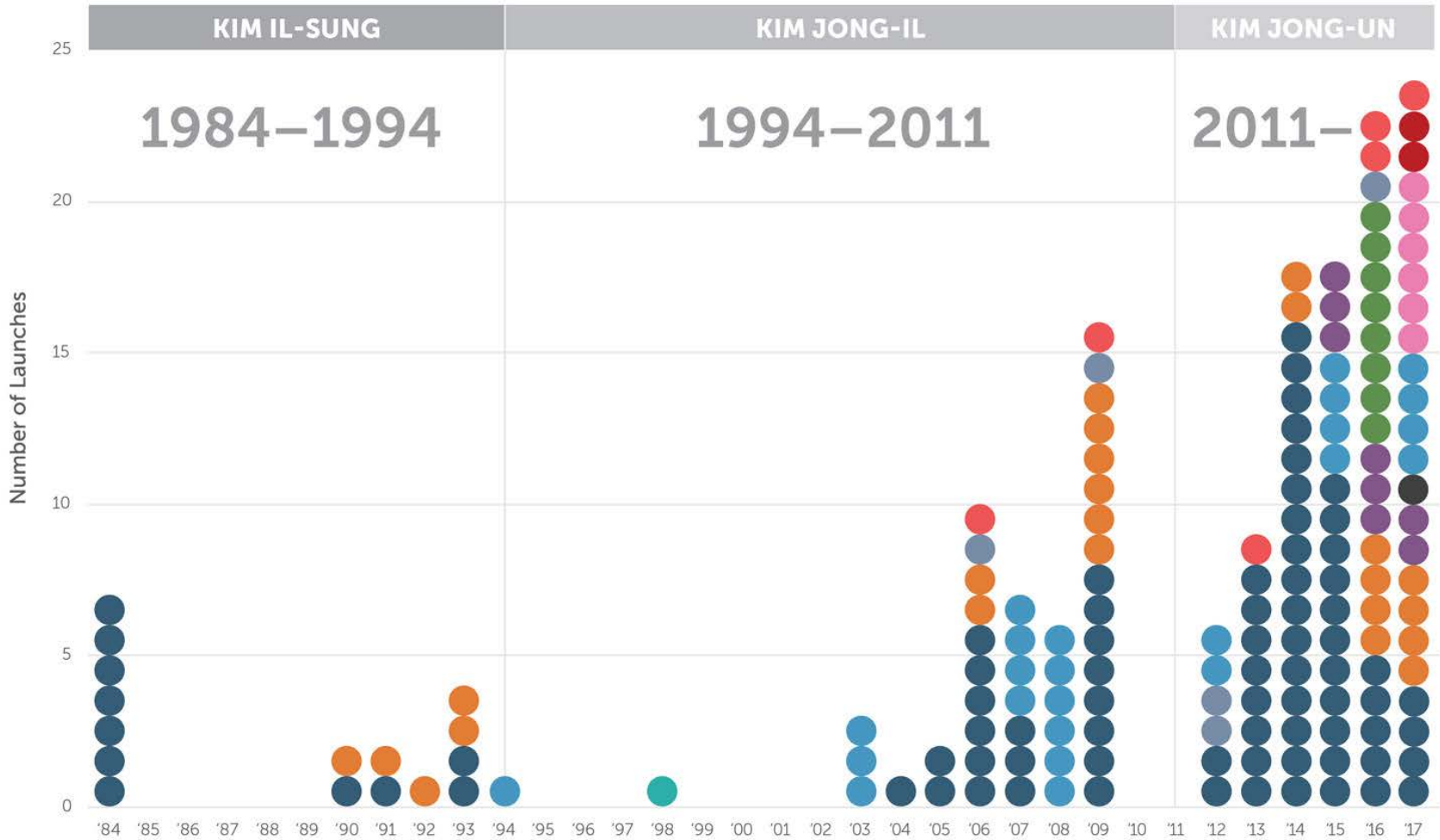


Hwasong-14 ICBM

- 10,000+ km (6,200 mi) range
 - Seattle
 - Los Angeles
 - Chicago
 - New York (maybe)



NORTH KOREAN MISSILE LAUNCHES



- **Hwasong-14**
(10,000 km+)
- **Hwasong-12**
(4,500 km)
- **BM-25 Musudan**
(2,500–4,000 km)
- **Cruise Missile**
(KH-35, KN-01, 150–260 km)

- **KN-11 SLBM / KN-15**
(900–2,000 km)
- **MRBM – Medium-range ballistic missile**
(Scud-ER, No Dong, 1,000–1,500 km)
- **Nuclear Test**

- **SRBM – Short-range ballistic missile**
(Scud variants, KN-02, 150–1,000 km)
- **Taepodong-1**
(2,000–5,000 km)
- **Taepodong-2/Unha-3**
(4,000–15,000 km)
- **Unknown**

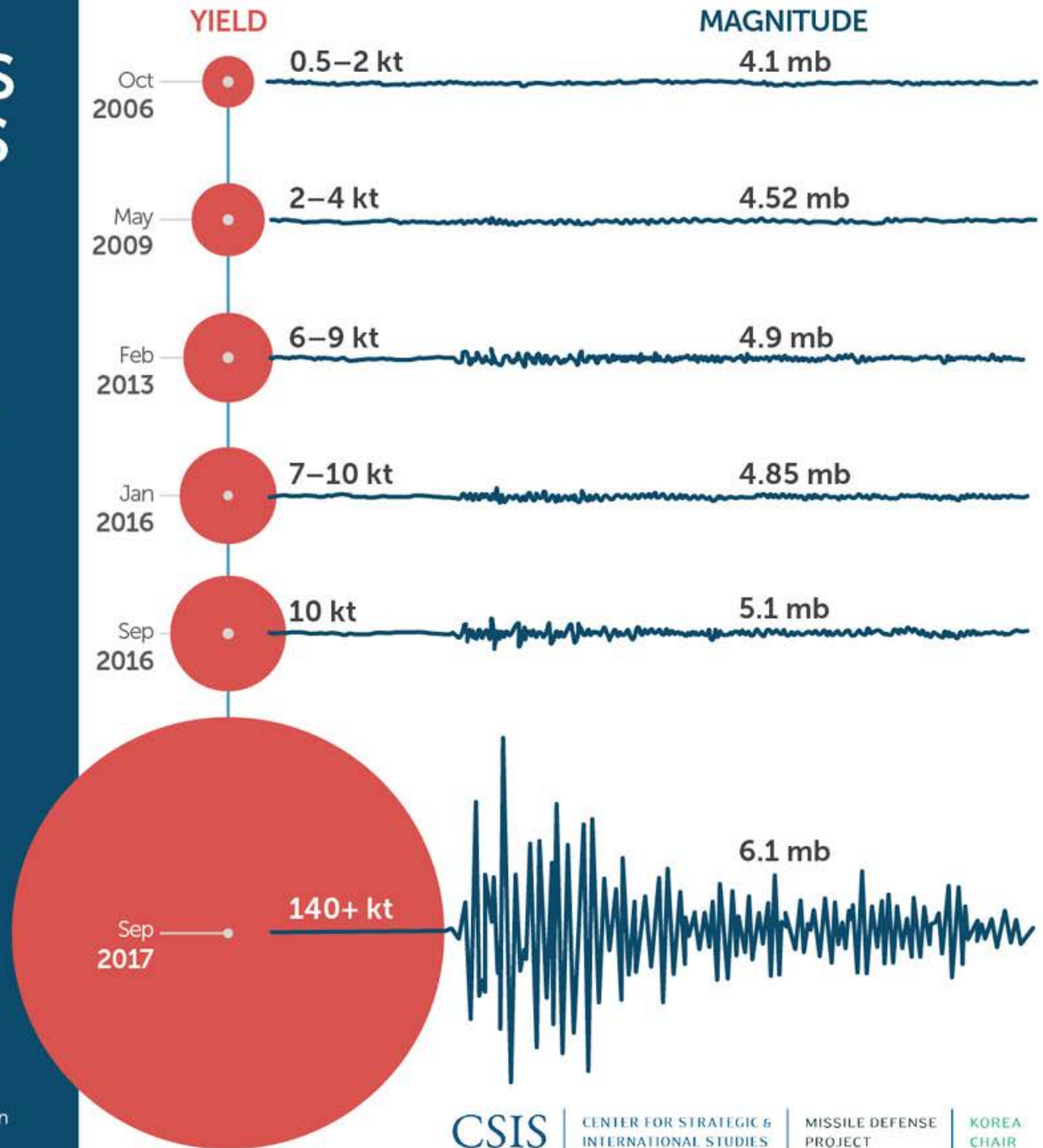
Accounts for full flight tests only. Does not include partial tests of missile subsystems such as static engine firings or cold-launch ejection tests, tests of air defense systems, or short-range rockets and artillery firings. Updated September 20, 2017.

NORTH KOREA'S NUCLEAR TESTS



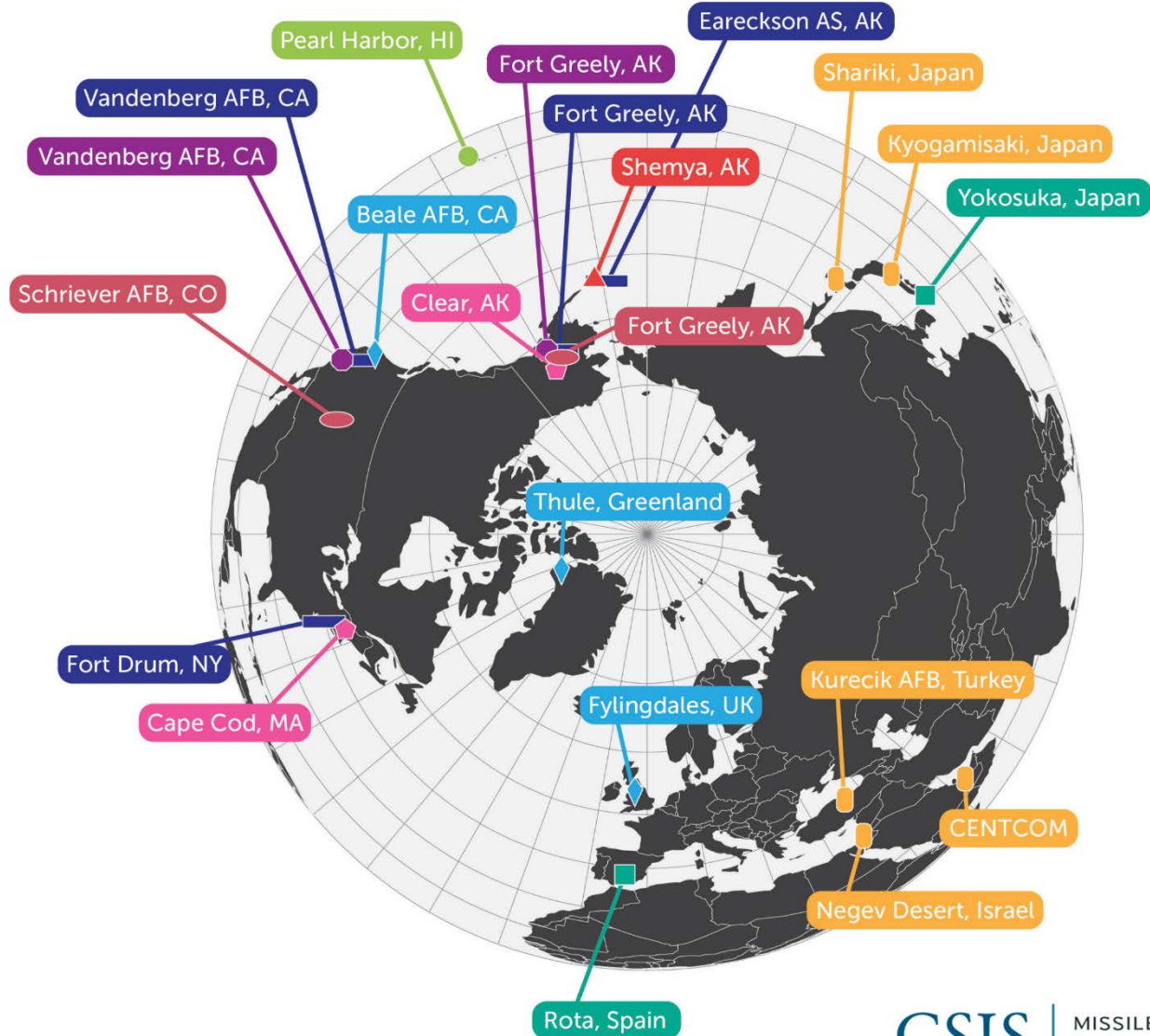
Magnitude: Body wave magnitude (mb) measures the size of a seismic event, such as an earthquake. It is one factor used to estimate the yield of a nuclear weapon after an underground detonation.

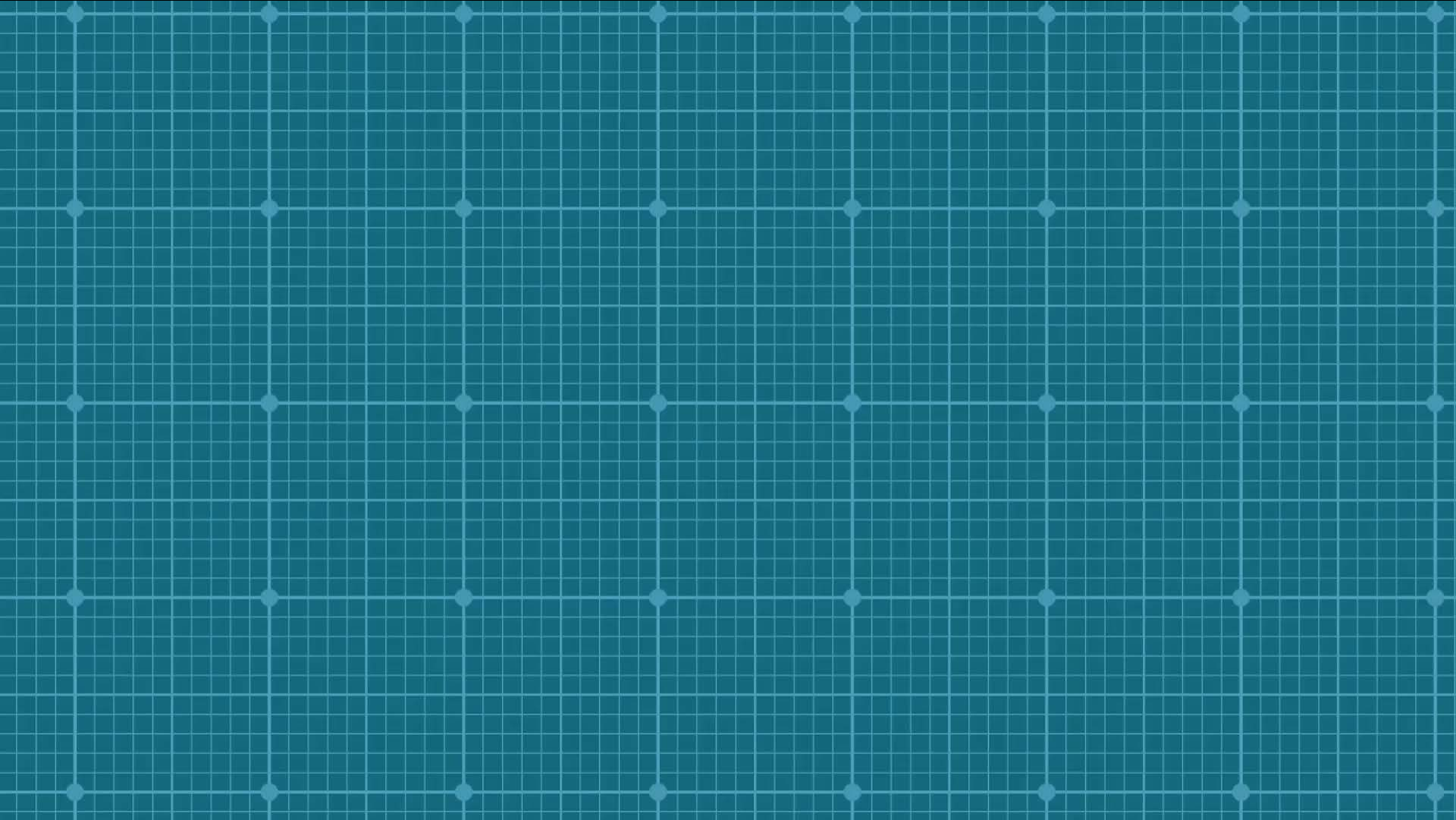
Yield: Measured in kilotons (kt), yield represents the amount of energy released when a nuclear device is detonated. One kiloton is equal to the explosive force of 1,000 tons of TNT.



HOMELAND MISSILE DEFENSE ASSETS

- Aegis SPY-1 ● Sea-Based X-Band ▲ COBRA DANE ■ AN/TPY-2 Radar ◆ Early Warning Radars
- ◆ Upgraded Early Warning Radars ● Ground Based Interceptor ■ Inflight Data Terminal (IDT) ● GMD Fire Control

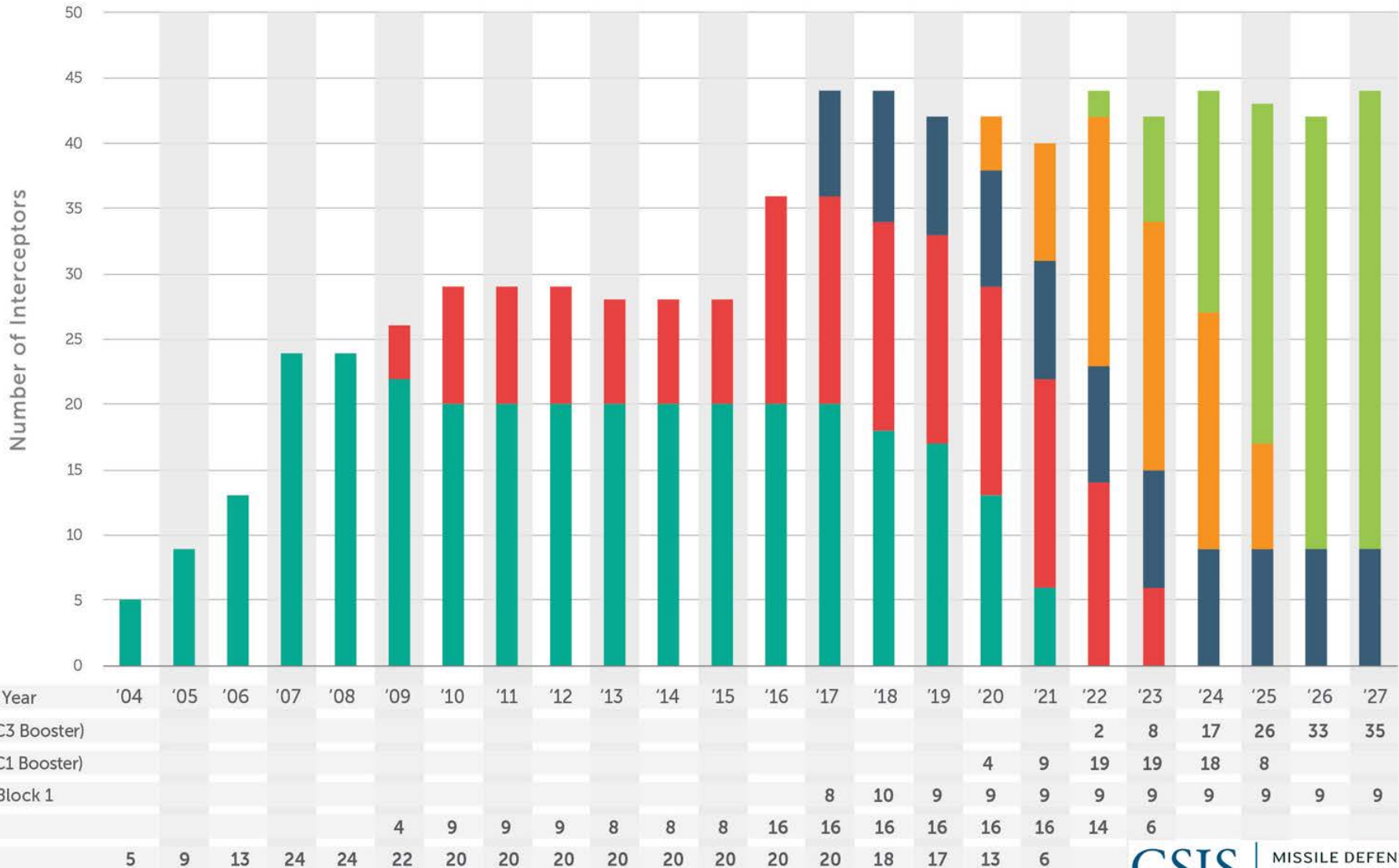




What we need to improve homeland defense:

- More reliable / producible / cheaper GBIs
 - Redesigned Kill Vehicle (2021-ish)
- More GBIs
- More sensors
- Different kinds of sensors
 - High altitude / space-based

GBI Fleet Evolution, Past and Projected Deployments, 2004–2027



FORT GREELY, ALASKA

MISSILE FIELD 3
20 GBIs / 20 SILOS

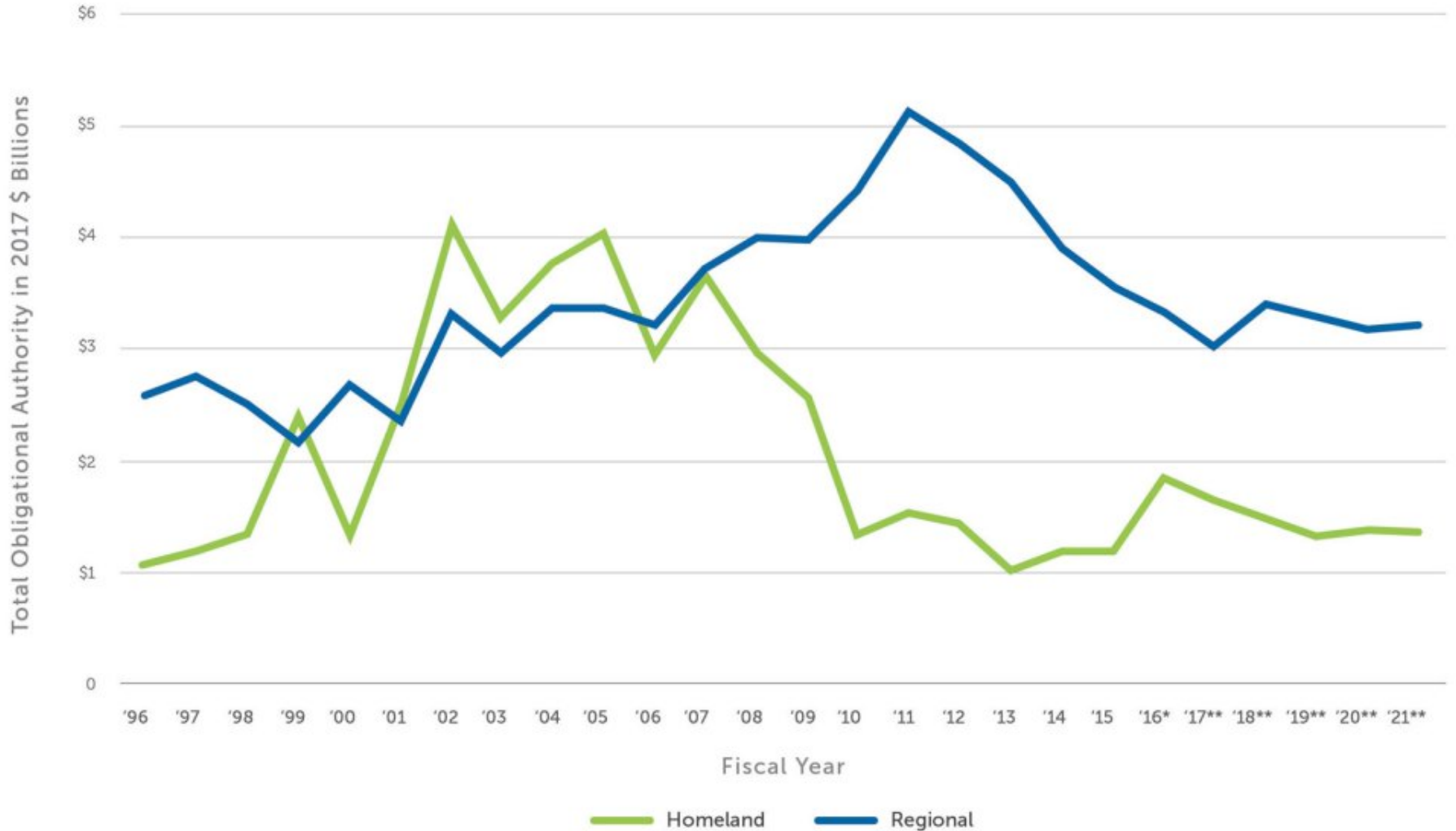
MISSILE FIELD 1
6 GBIs / 20 SILOS

MISSILE FIELD 2
14 GBIs / 14 SILOS

MISSILE FIELDS 4 AND 5
NOT YET CONSTRUCTED

100
INTERCEPTORS

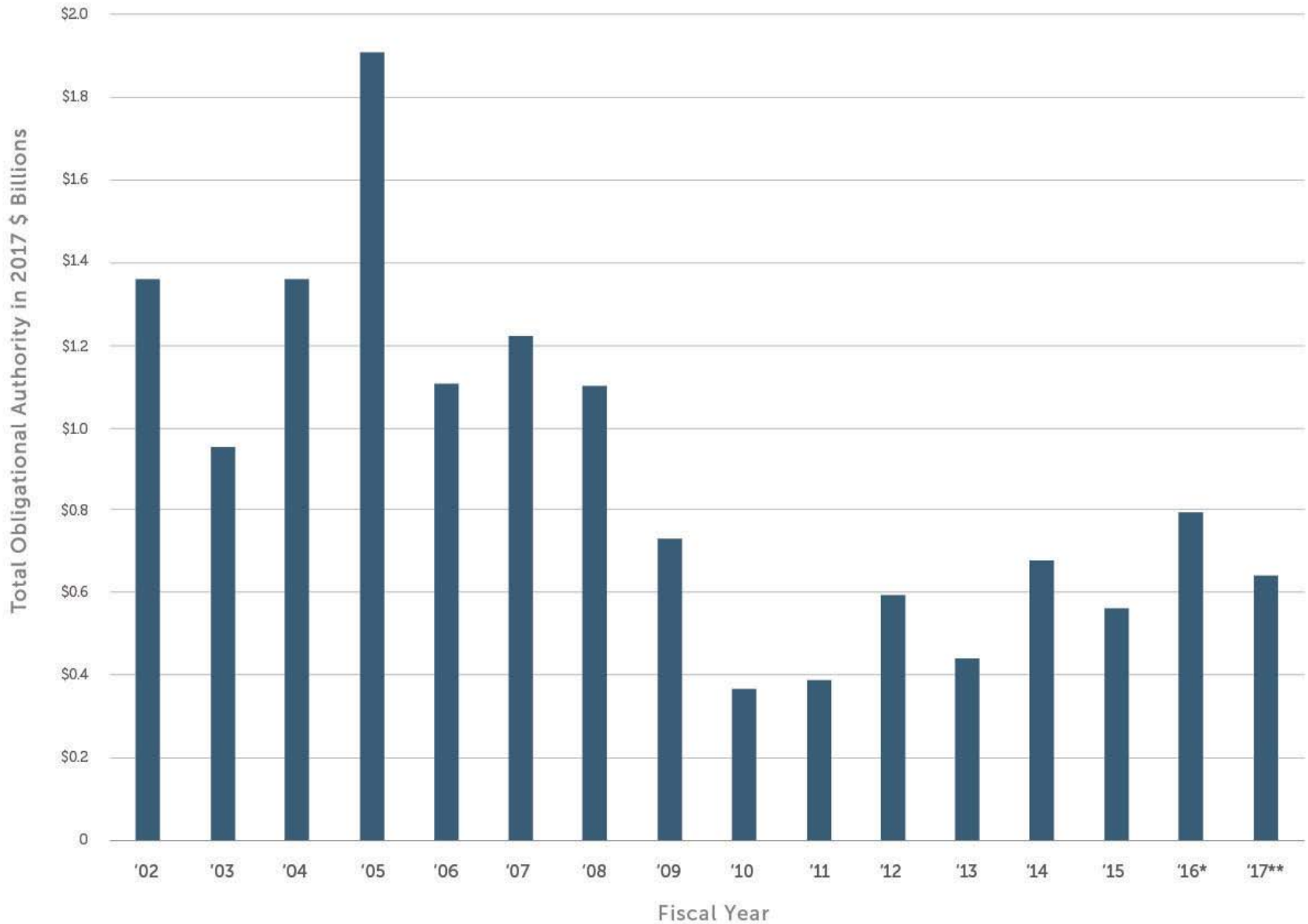
Homeland and Regional Modernization, 1996–2021



*Based on FY2016 Enactment

**Based on FY17 PB Request

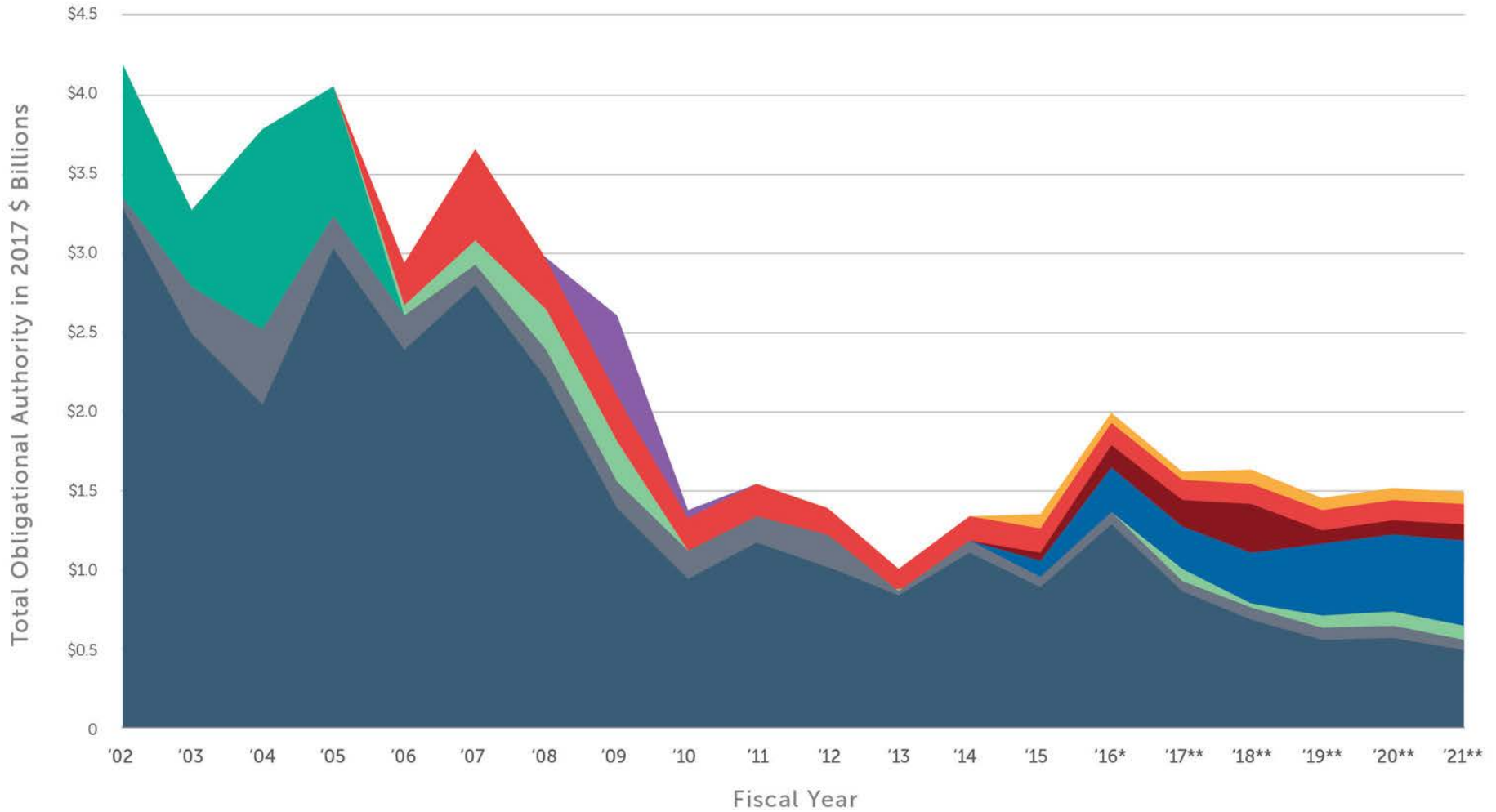
GBI RDT&E Budget, 2002–2017



*Based on FY2016 Enactment

**Based on FY17 PB Request

GMD Program Components, 2002–2021

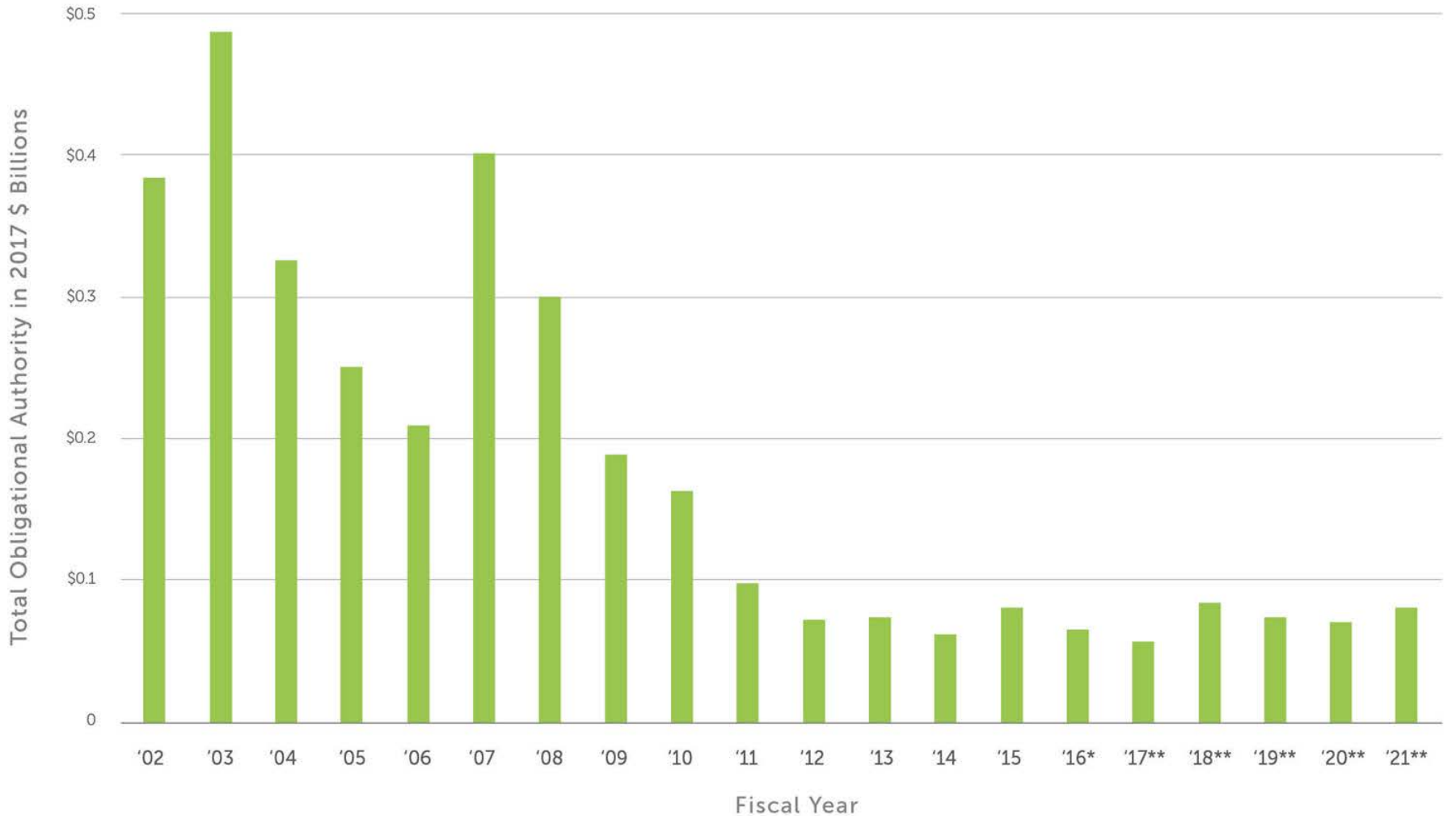


- GMD Base
- SBX
- 2004 Test Bed/Initial Defensive Capability
- MKV/MOKV
- RKV/C3 Booster
- LRDR
- GMD Sustainment/O&M
- European Third Site
- Testing

*Based on FY2016 Enactment

**Based on FY17 PB Request

GMD Testing Budget, 2002–2021

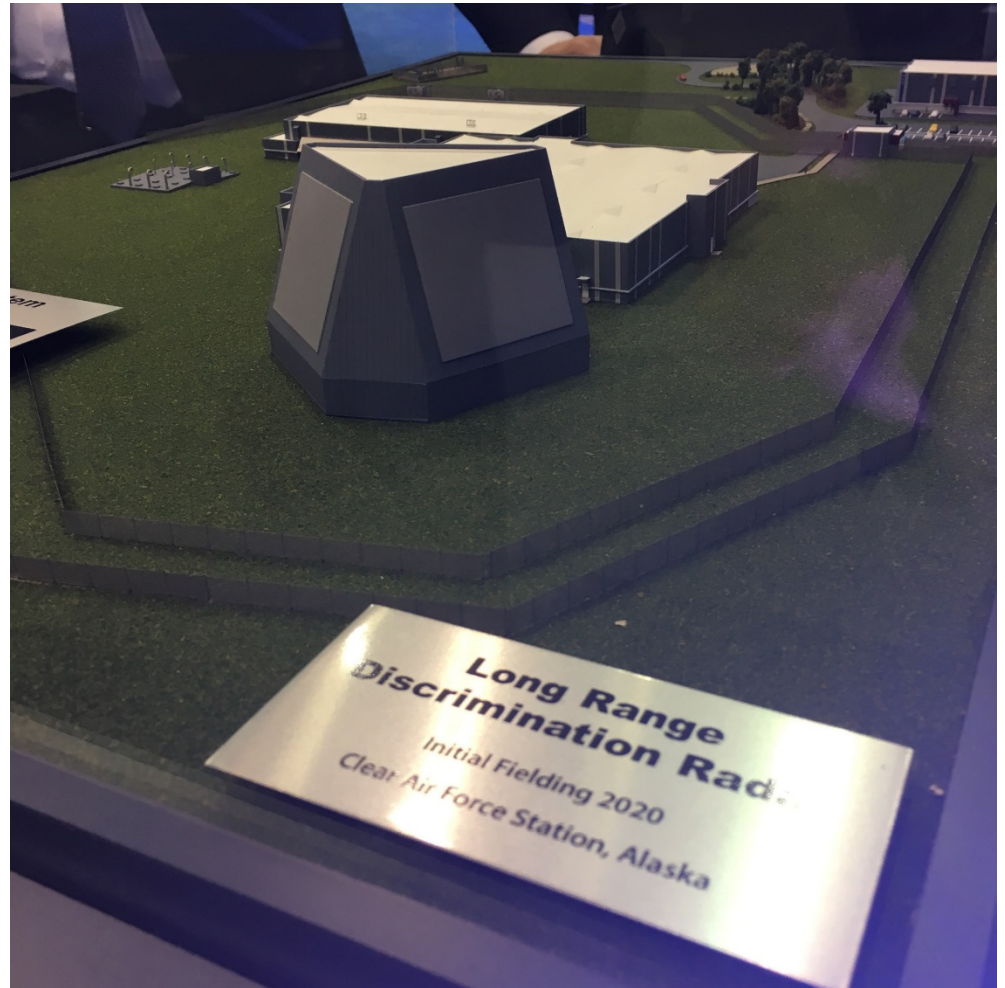


*Based on FY2016 Enactment

**Based on FY17 PB Request

Near Term Plans:

- 44 GBIs by 2017
- Completion of Long Range Discriminating Radar by 2020 (Clear AFS)
- Redesigned Kill Vehicle + New Booster (first deployments expected in 2021-ish)



Recent Developments:

- **Sullivan amendment to 2018 Senate NDAA**
 - Directs DoD to deploy 28 more GBIs
 - Explore options for 100 GBIs
 - Develop plan for space-based sensor layer
- **\$416 million FY17 Reprogramming**
 - Would fund MILCON for +20 GBIs at FGA (\$136 million)
 - SBX upgrades, Hawaii radar, Cobra Dane life-extension
- **Possible supplemental request for FY2018**



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