

Landsat, What's Next?

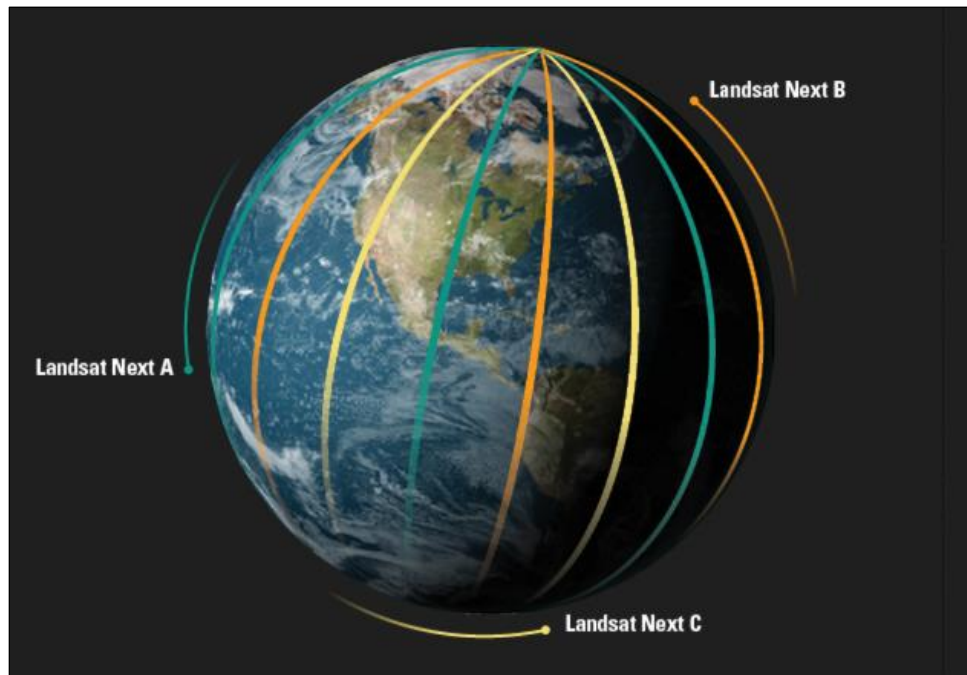
Updated June 16, 2025

In 2022, the National Aeronautics and Space Administration (NASA) and the U.S. Geological Survey (USGS) [presented](#) initial details about Landsat Next, a proposed mission to continue the Landsat series of Earth-observing satellite missions that began in 1972. [Landsat Next](#) is envisioned to be a constellation of three satellites sent into orbit on the same launch vehicle in or after 2030 (**Figure 1**). After entering Formulation Phase A to complete concept and technology development, Congress provided funds in FY2024 to [initiate](#) Landsat Next. NASA then [selected](#) the Raytheon Company on June 13, 2024, to design and build the [Landsat Next Instrument Suite](#) (LandIS), which is to include three instruments, with an option for one additional instrument. On May 2, 2025, President Trump released the [FY2026 budget request](#), which stated that NASA would use the requested FY2026 funding to restructure the Landsat Next mission while it studies more affordable ways to maintain the continuity of Landsat imagery.

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Figure 1. Schematic of Landsat Next Constellation

Source: U.S. Geological Survey, “Landsat Next,” <https://www.usgs.gov/landsat-missions/landsat-next>.

Notes: The green, orange, and yellow paths are to be taken by Landsat Next satellites A, B, and C, respectively.

Landsat and the Sustainable Land Imaging Program

Landsat sensors detect and digitally record visible, shortwave-infrared, and thermal-infrared energy. The sensors transmit images to ground stations, where they are processed and stored in a data archive. Landsat images are intended to be consistent with archived images to enable long-term comparisons of changes in Earth’s land features. Landsat data is [publicly available](#) for free, including through the [commercial cloud](#).

In 2016, NASA and the Department of the Interior, which includes the USGS, entered into an interagency agreement to redefine their long-term Landsat collaboration through the Sustainable Land Imaging Program (SLIP) and outline their respective responsibilities for future missions. Under SLIP, the agencies are to develop a multi-decadal, spaceborne system to provide high-quality global land-imaging measurements compatible with the existing Landsat record. In practice, NASA develops Landsat satellites and instruments, launches the spacecraft, and checks initial mission performance. The USGS then takes over satellite operations and manages the collected image data at the [Earth Resources Observation and Science Center](#). SLIP’s [memorandum of understanding](#) also calls for jointly developing program strategy and architecture, identifying user needs, and defining mission requirements.

Current Landsat Observations

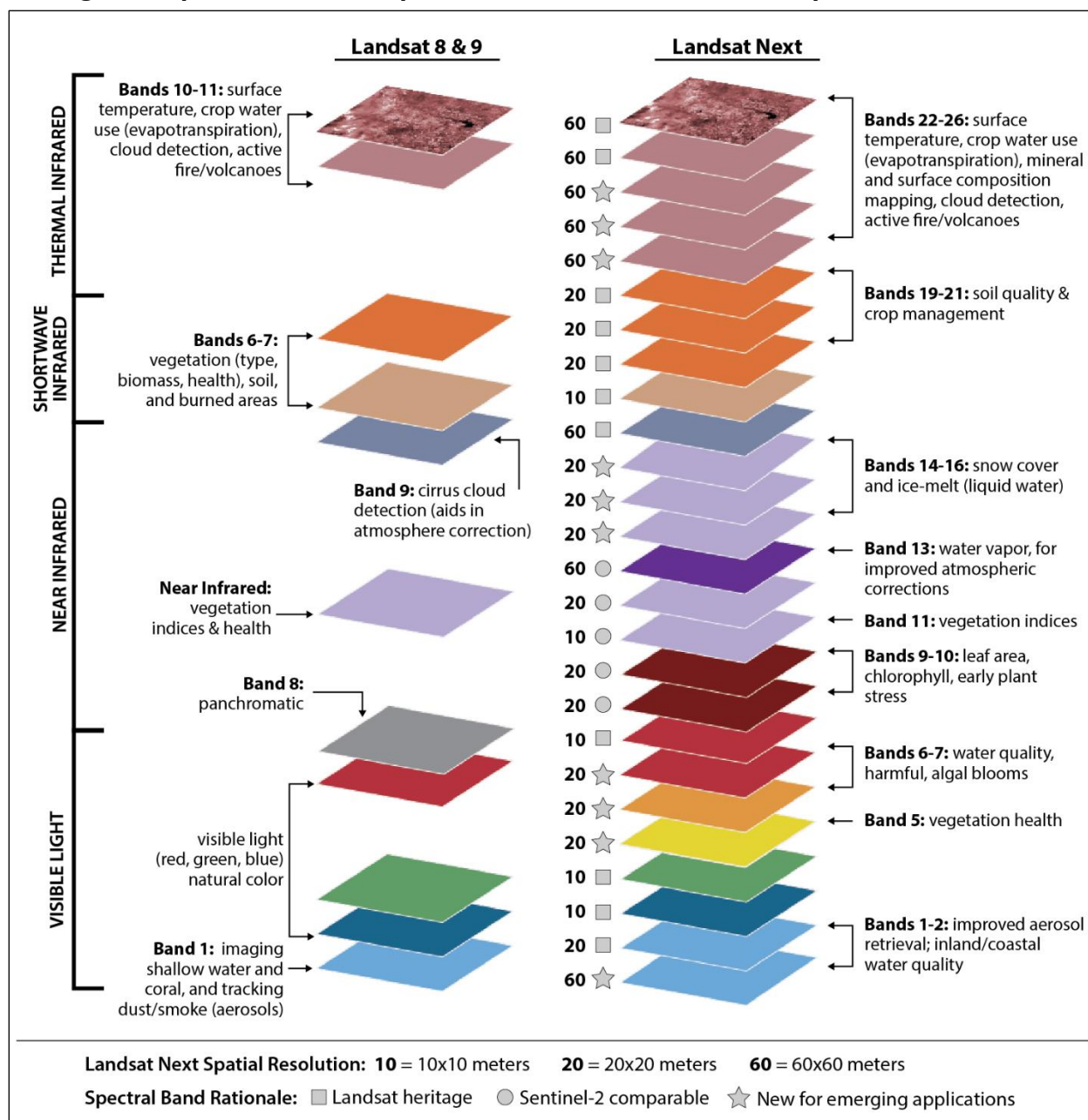
Landsat 9 was the first Landsat satellite launched under SLIP. Currently, [Landsat 8 and 9](#) add nearly 1,500 new images a day to the Landsat archive. The satellites each carry two sensors: an operational land imager (OLI) and a thermal infrared sensor (TIRS). Both instruments have a five-year mission design life, though they may operate longer. For more information, see CRS Report R46560, *Landsat 9 and the Future of the Sustainable Land Imaging Program*.

Other countries have remote sensing satellite systems complementary to Landsat. For example, the European Space Agency has deployed its Sentinel-2A and Sentinel-2B satellites with many of the characteristics of Landsat 8 and 9, though the Sentinel satellites have additional capabilities (e.g., red-edge and water vapor spectral bands) but lack thermal-infrared capability. Collectively, these satellites and others represent a system of systems, as called for in the National Academies' [2018 decadal strategy](#) for Earth observation from space.

Landsat Next Specifications

Under SLIP, a Joint Agency Sustainable Land Imaging Architecture Study Team initiated in 2018 evaluated an acquisition strategy for a follow-on mission to Landsat 9 that would best satisfy [user needs](#), mission architecture, and mission requirements. Based on the [report's findings](#), NASA and the USGS [presented](#) plans for the Landsat Next constellation, which aims to improve temporal, spatial, and spectral resolutions by two to three times, while maintaining radiometric resolution (e.g., how much information is perceived by a satellite's sensor). The agencies expect the proposed Landsat Next to collect about 15 times more data than Landsat 9.

In particular, [Landsat Next](#) would have revisit times of six days, whereas Landsat 8 and 9 in tandem have a revisit time of eight days. Compared with the current 11 spectral bands, the sensors on Landsat Next would have a combined 26 spectral bands (**Figure 2**), including refined versions of the 11 Landsat “heritage” bands, 5 bands with similar characteristics to Sentinel-2 bands, and 10 new bands to support emerging applications. Landsat Next also would increase spatial resolution for many bands.

Figure 2. Spectral Band Comparison of Landsat 8 and 9 and Proposed Landsat Next

Source: CRS using USGS, "Landsat Next," <https://www.usgs.gov/landsat-missions/landsat-next>.

Notes: Landsat missions are collaborations between NASA and the USGS. Sentinel-2 is a European Space Agency mission.

Proposed Mission Restructuring and Studies

One criticism of Landsat Next as designed is the impact of mission and ground system development costs on NASA and USGS budgets. Expounding on this concern, the National Academies' decadal strategy committee recently [stated](#) that "Landsat Next goes substantially beyond providing simple continuity of the existing Landsat observations." President Trump's [FY2026 budget request](#) proposes studying alternative mission architectures to provide imagery at a lower cost than Landsat Next. The [request](#) would

fund studies under Sustainable Land Imaging for options that “better leverage commercial capabilities and/or take advantage of current technology development efforts, leverage the design of the LandIS instrument development intended for Landsat Next, and other architecture options.” As such, the [FY2026 NASA budget](#) requests \$70 million for Sustainable Land Imaging and no funding for Landsat Next. The [FY2026 USGS budget](#) requests \$82 million for Satellite Operations but does not elaborate on the \$14 million reduction compared with FY2025.

Issues for Congress

Congress has [debated](#) on how to maintain the continuity of Earth imagery data from Landsat missions and at times has provided direction on mission development. The Biden and Trump Administrations have proposed different approaches to collect imagery following Landsat 8 and 9. Congress may consider supporting these or alternative options. In evaluating various approaches, Congress may consider tradeoffs such as total mission costs, data resolution and spectral coverage, and the estimated time until the mission would be operational. In addition, Congress may conduct oversight on the progress of the selected approach.

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