

40 km Summary Impacts

Although the overarching design of CE envisions two planned observatories, it is possible that only the 40km observatory will be built pending ongoing design, available funding, and the construction and operation of other next generation gravitational wave detectors. The summary below provides an overview of the economic and qualitative impacts of the 40 km observatory.

One-Time Construction Impacts

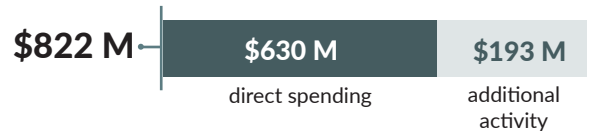


\$1.2 Billion (2024\$)
Construction Cost

About 50 percent of these construction costs will occur within the local economy in the county where CE is built, supporting local contractors, labor, and materials suppliers



Local Economic Output



One-Time Local Jobs



Recurring Operational Impacts

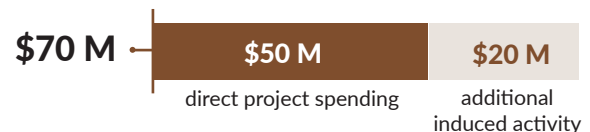


\$70 Million (2024\$)
ongoing local economic output

About 70 percent of operational costs are associated with employee compensation



Local Economic Output



Local Jobs



Qualitative & Long-Term Benefits

Beyond the measurable economic impacts, CE is poised to deliver wide-ranging benefits to the regions and communities where its observatories are located. These qualitative impacts extend from local partnerships and educational opportunities to technological breakthroughs that can spur growth across multiple industries. Key anticipated benefits include:



Strengthening community partnerships that foster collaboration between the observatory, local governments, schools, and organizations.



Advancing science and higher education through groundbreaking research expands understanding of the universe and inspires the next generation of scientists.



Expanding community science education by developing hands-on learning centers—similar to existing LIGO exploration facilities—that each attract roughly 10,000 students annually.



Driving technological innovation with applications that reach far beyond astrophysics, supporting progress in fields such as medical technology, defense, and sustainable energy.



Building a skilled workforce pipeline that connects students and professionals to careers in national laboratories, aerospace, technology, and related industries.



Supporting periodic facility upgrades—similar to LIGO's \$310 million “Advanced LIGO” improvements—that will generate additional local economic activity as new technologies are developed and installed.