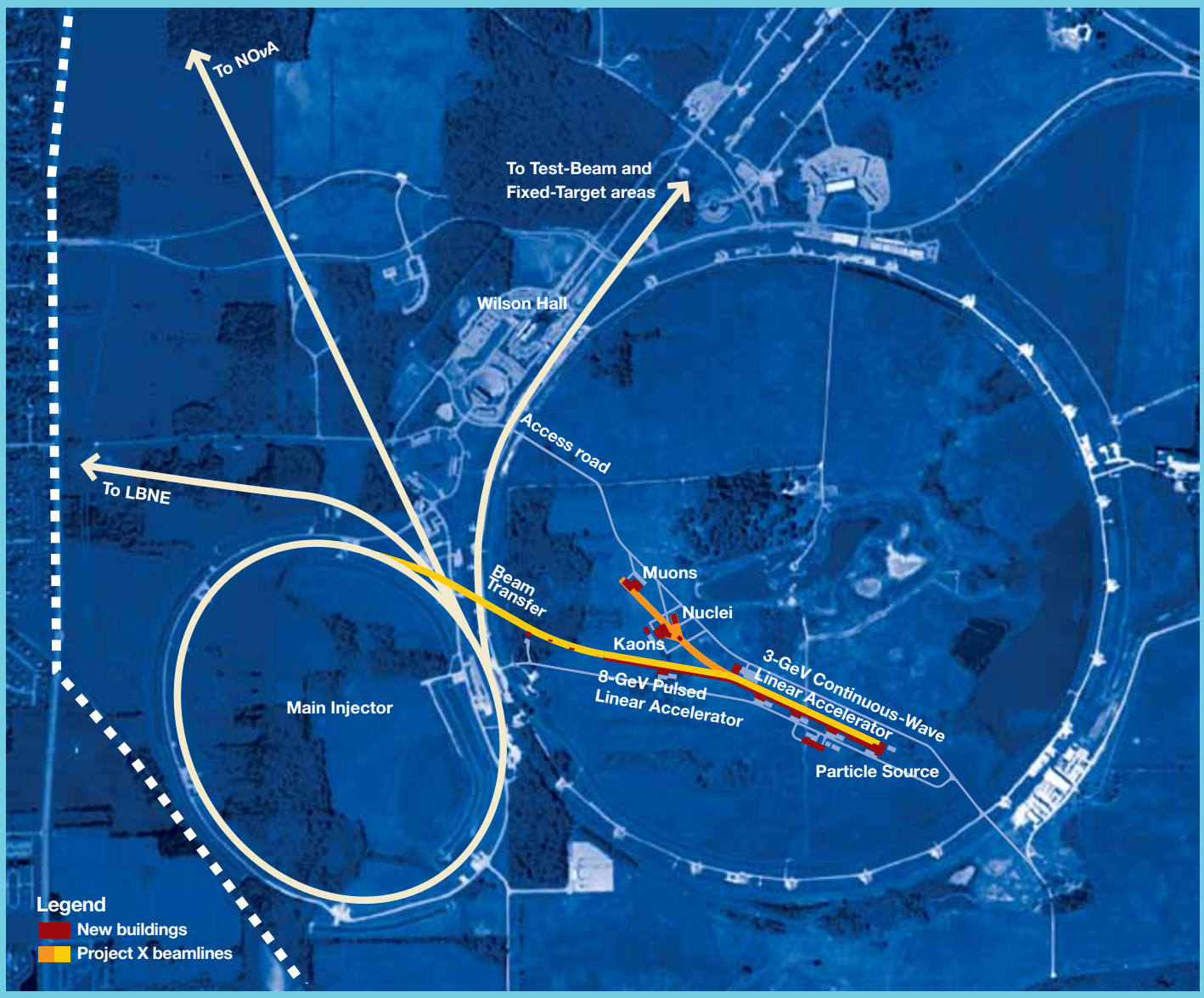

Project X

Project X will be the world's most intense and flexible proton accelerator. The key to Fermilab's long-term world leadership at the Intensity Frontier, it will simultaneously provide 2.3 MW of proton beam power at 60—120 GeV; up to 200 kW at 8 GeV; and 2.9 MW at 3 GeV. Fermilab is pursuing the design and construction of this unique facility in collaboration with national and international partners.

Experiments at Project X

Project X will produce intense beams of neutrinos, kaons and muons, and will produce copious quantities of heavy nuclei. Starting in the 2020s, experiments using Project X beams will be essential to break through to a deeper understanding of nature and the origins of matter, either discovering new phenomena or providing the critical clues that explain new physics discovered elsewhere.

Neutrinos: Long- and short-baseline neutrino experiments will search for leptonic CP violation and study the physics of neutrino interactions with unmatched precision

Kaons: Ultra-rare kaon-decay experiments will either test the Standard Model with uniquely high precision or discover new physics at the 1000-TeV scale

Muons: Experiments could discover unexpected lepton-flavor violations or subtle new physics at the quantum-loop level

Nuclei: Ultra-sensitive electric dipole moment searches will approach limits of 10^{-31} e-cm or discover a new type of CP violation in the strong interaction