



# ***CFS EDR FNAL Kick-Off Planning Meeting***

## ***Cut and Cover/Near Surface Overview***

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## **First Some Definitions**

- ***A “Near Surface” Configuration is NOT a “Cut and Cover” Configuration***
- ***A “Near Surface” Solution is a Shallow Version of the Deep Tunnel Solution (i.e. TESLA or XFEL)***
- ***A “Cut and Cover” Configuration Implies a Reasonably Uniform Surface Elevation that Allows the Use of Conventional Excavation Techniques***
- ***The Accelerator Enclosure Would Likely be Constructed Using Precast Units***
- ***A Continuous (?) Support Gallery Would be Constructed on the Surface Using Conventional Building Methods***



## Previous Work to Date

- *Illinois and California Near Surface Solutions for the Next Linear Collider (NLC)*
- *Proton Driver Cut and Cover Studies for the Fermilab Site*
- *Preliminary Investigation of the Hanford Laboratory Site for the NLC*



## **Some General Implications**

- ***A Near Surface Solution and a Deep Tunnel Solution may have a Similar Surface Presence***
- ***A Near Surface Solution may have a More Negative Impact on Issues of Land Ownership***
- ***Depending on the Site, Stability may be More of an Issue with an Near Surface or Cut and Cover Solution when Compared to a Deep Tunnel Configuration***
- ***A Deep Tunnel Solution Requires the Minimum Acquisition of Surface Property***
- ***A Cut and Cover Solution Causes Maximum Surface Disruption and Requires Maximum Land Acquisition***
- ***No Feasible Cut and Cover Site is Available Near an Existing High Energy Physics Research Facility***



## What is the CFS Task ?

- *Analyze an Optimum Cut and Cover Site with Uniform Surface Elevation as a Baseline for Comparison*
- *Optimum Site Still Requires a “Line on a Map”*
- *Optimum Site will Still need to be Investigated for Additional Costs Due to the lack of Proximity to Needed Infrastructure*
- *A Near Surface Solution will Require an Analysis of the Deep Tunnel Criteria Applied to a Less Deep Site and Possible One Tunnel Configuration with Additional Surface Building Construction*
- *The “Near Surface”/”Cut and Cover” Issue is not Simple or Straightforward*
- *What is the Question that the CFS Group needs to Answer ??*