Executive Summary

During original construction of the Pennsylvania Turnpike, construction activities activated a landslide that is referred to as the New Baltimore Slide. The active slide zone is 800 feet wide and extends 1,100 feet upslope from the roadway. This mass of rock and soil has been moving slowly since original construction, and has been periodically measured and monitored to ensure safety of the traveling public.

The Commission's roadway widening efforts across the mainline will directly impact the slide and requires detailed geotechnical analysis to facilitate its removal. Therefore, JMT developed a rigorous field survey monitoring program to provide the engineers with data on rate and direction of movement.

Long-term monitoring was facilitated by establishing a survey baseline consisting of setting control point pairs beyond each side of the slide, then running a traverse between sides. Next, a hillside traverse was established from the survey baseline along with 63 specific hillside monitoring points. Survey data was reduced to a summary format and provided to the engineers for their review and analysis. This effort has been repeated 33 times in the past four years.

Project challenges included moderate to very steep site terrain and access, awareness of fissure locations up to one foot wide, and extreme temperature and climate variations. Other challenges included ticks, snakes, yellow jackets, hunting seasons, tree cover, on-site timbering and logging residue, rock outcrops and steep drop-off areas.

The design team will use the results of this monitoring effort for the upcoming $77.5M slide stabilization project.