

# S-1

## DESCRIPTION

- New bridge on existing alignment.
- A grated two-lane temporary bridge will be built prior to construction of the new bridge and will be removed after the new bridge is constructed.

## SITE VICINITY



## ADVANTAGES

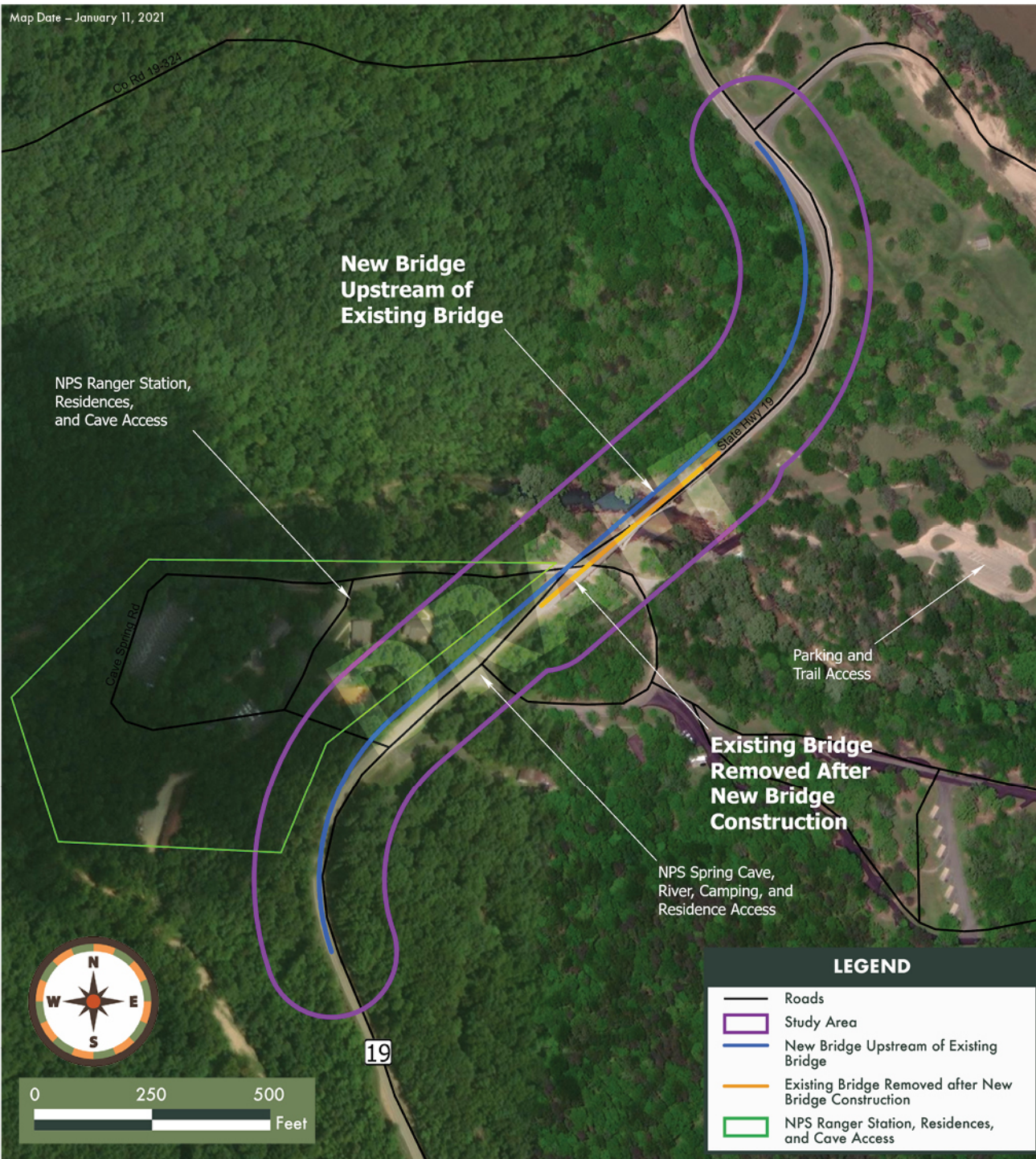
- Matches location of existing bridge.
- Less permanent roadway work.
- Avoids retaining walls or reinforced slopes.

## DISADVANTAGES

- Additional cost for temporary bridge.
- Builds two bridges over the channel during construction.
- Extensive formwork in the channel.
- Longer construction period than new bridge on new alignment.

## LEGEND

- Roads
- ▭ Study Area
- ▬ New Bridge on Existing Alignment
- ▬ Grated Two-Lane Temporary Bridge Removed after New Bridge Construction
- ▭ NPS Ranger Station, Residences, and Cave Access



# S-2

## DESCRIPTION

- New bridge upstream (northwest) of the existing bridge.
- No temporary bridge required.

## SITE VICINITY

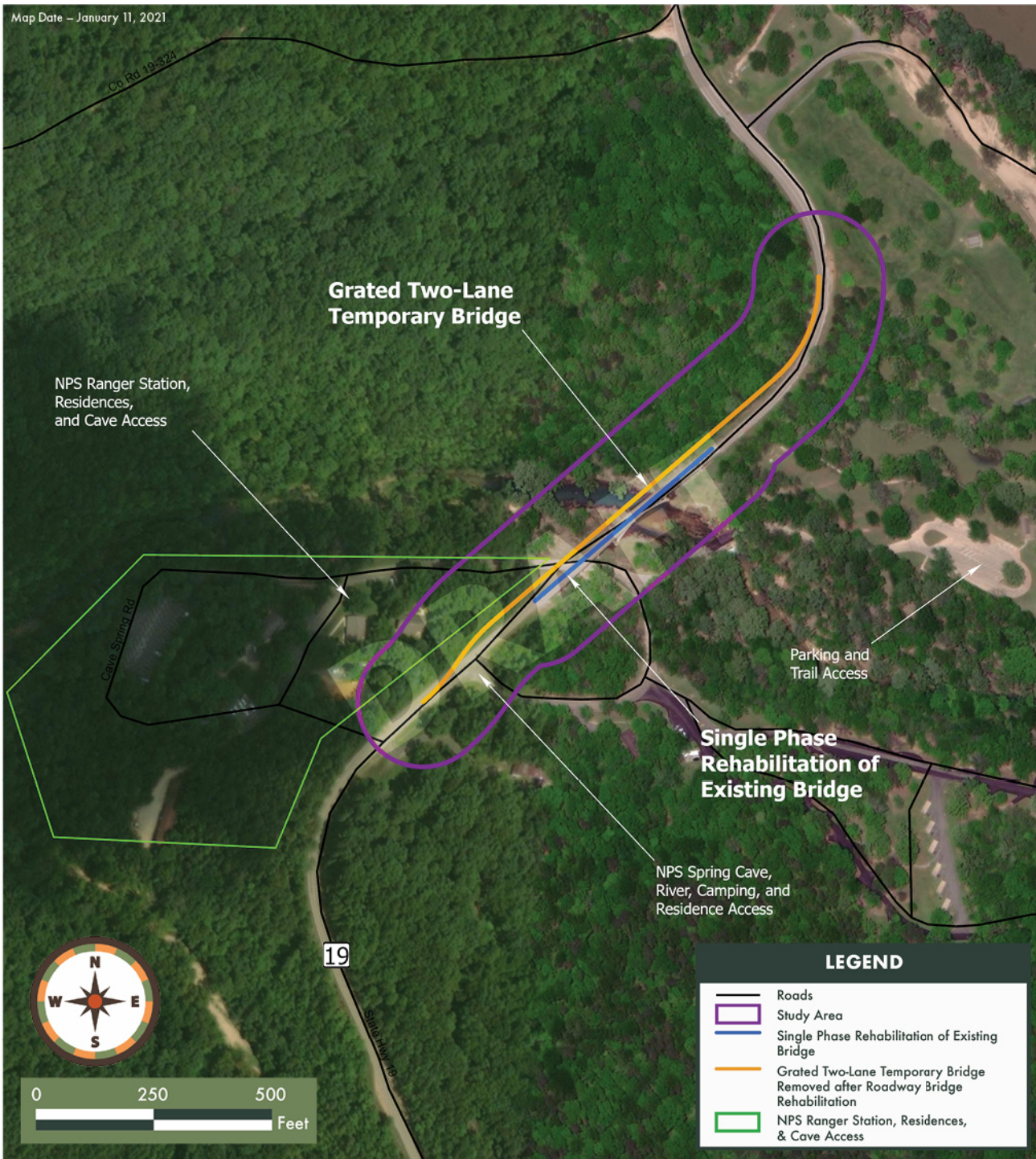


## ADVANTAGES

- Shorter construction period than new bridge on existing alignment or rehabilitated bridge.
- No temporary bridge required; cost savings.

## DISADVANTAGES

- More permanent roadway work.
- May need retaining walls or reinforced slopes.



# S-3

## DESCRIPTION

- Single phase rehabilitation of the existing bridge.
- A grated two-lane temporary bridge will be built prior to the rehabilitation of the existing bridge and will be removed after the existing bridge is rehabilitated.

## SITE VICINITY



## ADVANTAGES

- Matches location of existing bridge.
- Less permanent roadway work.
- Avoids retaining walls or reinforced slopes.

## DISADVANTAGES

- Additional cost for temporary bridge.
- Remediated concrete of the existing bridge is buried in the structure, possibly requiring further rehabilitation in the future.
- Shorter life expectancy compared to a new bridge.
- Extensive formwork in channel.