

CHARTER

2022 Reference Frame Working Group of the Statewide Mapping Advisory Committee

The *2022 Reference Frame Working Group* reports to the Statewide Mapping Advisory Committee (SMAC), which operates under the authority of the North Carolina Geographic Information Coordinating Council (GICC). The working group is ad-hoc, focused on the reference frame issue, and will be dissolved when it completes its assigned tasks.

Background

There are proposed changes from horizontal and vertical datums to a Reference Frame by the National Geodetic Survey. The North American Datum of 1983 (NAD83) and North American Vertical Datum of 1988 (NAVD88) will be replaced in 2022 with new reference frames (geometric and geopotential) which will rely primarily on Global Navigation Satellite Systems (GNSS) such as the Global Positioning System (GPS) as well as an updated and time-tracked geoid model.

A practical reference frame in 2022 will be critical for reliable, accurate geospatial data provided by state, local, and regional organizations and their private vendors. *NC OneMap*, a primary initiative of the GICC, depends on high quality source geospatial datasets and services.

Purpose of the 2022 Reference Frame Working Group

The purpose of this committee is to:

1. Evaluate the impact of replacing NAD83 and NAVD88 with geometric and geopotential (4D¹) reference frames on state and local governments and the surveying and mapping industry.
2. Recommend practical solutions for implementation of the 2022 Reference Frame.

Topics for the working group to address may include (but are not limited to):

- a. Provide recommendations on how the state, local governments and the private sector can prepare for the transition to a new reference frame in 2022.
- b. Determine the impact of utilizing a 4D reference frame on 911 communications and response and local and state government GIS applications.
- c. Is a 4D or plate fixed solution a better option for North Carolina?
 - Long term construction projects (road construction and site monitoring)
 - Floodplain mapping
 - Local/state GIS applications
 - Land records management
- d. Develop a list of pros and cons comparing 4D reference frame to a plate fixed solution
- e. Make a recommendation (i.e., 4D reference frame or a plate fixed solution)

^{Note 1}4D (Latitude, Longitude, Ellipsoid Height, Velocities) coordinates change with time (e.g. ITRF00, ITRF08)

The working group will submit a report to the SMAC to include documentation of its findings and recommendations.

Appointment of the Chair

The Chair of the *2022 Reference Frame Working Group* will be appointed by the Chair of the Statewide Mapping Advisory Committee.

Working Group Membership

The Working Group may include appointments from the agencies/entities listed below. The chair may add additional members.

- Local Government Committee of the GICC
- State Government GIS Users Committee of the GICC
- Federal Interagency Committee of the GICC
- NC Property Mappers Association
- NC Board of Examiners for Engineers and Surveyors
- NC Chapter of the Urban and Regional Information Systems Association
- NC Surveyors Society
- Professional Engineers of North Carolina
- The North Carolina State University Library
- Center for Geographic Information and Analysis

Approved by the Statewide Mapping Advisory Committee, April __, 2016