

## DATA MANAGEMENT PLAN

The principal investigators will have overall responsibility for data management over the course of the research project and will monitor compliance with the plan.

### **Social Science** (Hartley and Wainger)

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Human Subjects Institutional Review Board approval will be sought for this research and all protocols and standards for informed consent, data management, and confidentiality will be observed throughout the proposed research.

**1. Products of the Research:** The social science research will produce questionnaires with measurement instruments for attitudes, perceptions, and opinions (typically 1-5 or 1-10 Likert scale measures) and for the nature of professional relationships between individuals (e.g., 1-5 or 1-10 scaled measures for communication frequency, perceived credibility of information sources, relevance of information in decision-making, influence of information for decision-making). The questionnaires will be administered electronically and hard-copy versions will be available upon request.

Data will be entered into excel, SPSS, or other database management and data analysis systems. Network data in excel will be imported into InFlow for network analysis and data file generation (i.e., map generation and centrality statistics).

**2. Data Formats:** The quantitative data files available in several widely used formats, excel and SPSS. Network maps will be available in jpeg image formats.

Each dataset will require documentation to ensure that others can use the dataset and to prevent misuse, misinterpretation, and confusion. Documentation provides information about the methodology and procedures used to collect the data, details about codes and measures, definitions of variables, variable field locations, centrality measures, etc.

**3. Access to Data and Data Sharing Practices and Policies:** While data will be archived and more broadly available upon request, all data sets will be stripped of items that could identify individual participants. In addition to removing direct identifiers (e.g., name, contact information), indirect identifiers (organization, gender, years of experience, and other demographic data) will be redacted. These public-use data files will have direct and indirect identifiers removed to minimize disclosure risk.

In those cases when removing potentially identifying information would significantly impair the analytic potential of the data, these files will be restricted-use data files, password protected on servers with access granted by the PI.

We consider the timely release and sharing of data to be no later than the acceptance for publication of the main findings from the final dataset.

Research ethics. The rights and privacy of human subjects will be protected at all times. Prior to sharing, data should be redacted to strip all identifiers, and effective strategies should be adopted to minimize risks of unauthorized disclosure of personal identifiers.

**4. Archiving of Data:** Data, files and other research products will be archived on the VIMS servers and files, with access made available upon request and consistent with the data access and sharing protocols. Data and software on the VIMS servers are regularly and automatically backed up, and the servers have back up emergency power sources.

#### **Natural Science (Cornwell, Hood, North, Wilberg)**

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The main products of the natural sciences research program will be in the form of model code. During the project, all model code will be archived on PI North's server which is backed up once daily to a terastation in another building on Horn Point campus. At the end of the project, all model code developed in this project (Fortran, C++, java) will be open-source and released with users guides on the program website created by PI North. The website will be linked to oceanographic code-sharing sites including Chesapeake Bay Community Modeling, Community Surface Dynamics Modeling System, and ROMS/TOM forum web pages.

Biological data generated by this project (e.g., PI Cornwell's synthesis of denitrification rates) will be hosted on the program web page and submitted to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) with FGDC-compliant metadata before the end of the project.

Presentations created by the science team for stakeholder workshops will also be hosted on the program website created by PI North before the end of the project.