

PROJECT PLAN FOR IMPLEMENTING NAD 83 IN THE MINERALS MANAGEMENT SERVICE

PART I: Responsibilities and Timeframes

(INTERNET VERSION)

Prepared By:

Paul Rogers, Cartographer
Mapping & Survey Staff Boundary Branch

For:

Leland F. Thormahlen, Chief
Mapping & Survey Staff Boundary Branch
Denver, Colorado

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i PREFACE TO INTERNET VERSION

This January 8, 1999, Internet version of "PROJECT PLAN FOR IMPLEMENTING NAD 83 IN THE MINERALS MANAGEMENT SERVICE, PART I: Responsibilities and Timeframes," is identical to the official May 3, 1993 version released by the Minerals Management Service except as noted below:

- The original document was developed using a Helvetica type style in WordPerfect version 5 and a Hewlett Packard LaserJet Series 2 printer. This Internet version was reformatted using an Arial type style in WordPerfect version 8, and a Hewlett Packard LaserJet 4MV printer. This has resulted in page numbering being slightly different from the original document.
- The name and phone number of the office within the Minerals Management Service responsible of developing and maintaining the offshore cadastres has been revised on the cover page and page 12.
- Figures 1 - 3 have been redrawn using WordPerfect 8.
- The Official Protraction Diagram (OPD) numbers have been revised to reflect the numbering format currently used in the Block and Boundary Component of the Minerals Management Service's Technical Information Management System (TIMS).
- The tables in Sections 8.2, 8.4, and 8.6 were recreated using WordPerfect 8.
- NAD 83 has been implemented in the Alaska, Atlantic, and Pacific OCS Regions. The Gulf of Mexico OCS Region continues on NAD 27.

ii. EXECUTIVE SUMMARY

Over the last five years (1987-92), the Minerals Management Service (MMS) has evaluated and tested various options for implementing the latest United States horizontal control datum--the North American Datum of 1983 (NAD 83). Initially the MMS examined not only what impact NAD 83 would have on the Agency, but also should the conversion be made from the North American Datum of 1927 (NAD 27) to NAD 83. In June 1989, the Federal Government officially adopted NAD 83 (54 FR 25318, June 14, 1989), rendering moot any option the Agency may have had in not converting. All efforts were then directed towards how to convert to NAD 83 **with minimal adverse program impact and expense.**

There are two major aspects to MMS implementation of NAD 83. First, the Agency has to implement NAD 83 with minimal program disruption, while maintaining the integrity of existing NAD 27 leaseholds. MMS's phased approach to NAD 83 implementation based upon the "Comprehensive Program" (Figure 1), specialized transformation procedures, and the parallel implementation of the Technical Information Management System (TIMS) accommodate this requirement.

| OCS Region/ Planning Area | Sale** Number | Sale** Date | MMS Target Completion Date*** | OCS Region/ Planning Area | Sale** Number | Sale** Date | MMS Target Completion Date*** |
|--|------------------|-------------|-------------------------------------|--|------------------|-------------|-------------------------------------|
| Alaska/ | | | | Atlantic/ | | | |
| Beaufort Sea | 144 | 12/95 | 2/95 | Mid-Atlantic | 164 | 10/96 | 11/94 |
| Chukchi Sea | 148 | 6/96 | 2/94 | South Atlantic | 164 | 10/96 | 11/94 |
| Cook Inlet/ Shelikof Strait | 149 | 9/94 | 10/93 | Gulf of Mexico/ Eastern GOM | 151 | 10/95 | TBD |
| GOA (Yakutat) | 158 | 8/95 | 12/94 | Pacific/ | | | |
| Hope Basin | 159 | 7/97 | 9/95 | Southern CA | N/A | N/A | TBD |
| St. George | 153 | 12/96 | 3/95 | Wash./Oregon | N/A | N/A | TBD |
| *Conversion schedule for planning areas not listed to be determined at a later date by the MMS NAD 83 Implementation Team. ***Comprehensive Program 1992-1997," April 1992. N/A = Not Applicable. ***Completed OPD's and SOBD's due to regional office. MSS = Mapping & Survey Staff. TBD = To Be Determined. | | | | | | | |

Figure 1. MMS NAD 83 planning area conversion schedule as determined by the MMS NAD 83 Implementation Team.

That is not to say that every conceivable issue or problem has been addressed in the project plan. At every level of government and private industry, NAD 83 implementation is a dynamic process as the advent of the High Accuracy Reference Networks (HARN's) illustrates.

HARN's are NAD 83 refinements, initiated by, and within, select individual States. However, technology, such as used in the Persian Gulf War, and the mushrooming use of Land and Geographic Information Systems (LIS/GIS), created a demand for more accurate positioning/surveying capabilities in the civilian sector than the original NAD 83

adjustment (NAD 83 (1986)) provided. In response to this need, the National Geodetic Survey plans to develop HARN's for all States over the next five years, effectively creating a second NAD 83-based horizontal control network ((NAD 83 (199x))¹.

Second, MMS employees must become datum conscious and verify datum references. Prior to 54 FR 25318 most Agency employees did not have to relate coordinates to a specific datum. MMS coordinate and associated data referenced NAD 27, and although other datums existed, MMS did not develop data tied to them. However, the United States adoption of NAD 83 directly or indirectly affects every aspect of the Agency's mission. Since the adoption of NAD 83, every locational coordinate (e.g., shot points) and areal measurement (e.g., the number of 8(g) hectares on a Supplemental Official OCS Block Diagram (SOBD)) must carry a specific datum reference. Do they reference NAD 27? Do they reference the original NAD 83 adjustment--NAD 83 (1986)? Do they reference a HARN--NAD 83 (199x)? **Assumptions are no longer acceptable**; the mixing of datum-referenced data can cause major problems and expense for the Agency.

The MMS holds and develops data which **appear** to be non-datum dependent. Some of this data, however, has a **direct** relationship to coordinate data which are datum dependent. For example:

- Rental fees and royalties for blocks leased within a planning area are derived from areal measurements computed from cadastre grid and boundary coordinates which are datum-dependent.
- Recent *relative positioning*² well spots have probably been developed from cadastre grid and boundary coordinates, especially if Global Positioning System (GPS) surveying, navigation, and positioning techniques have been employed to spot wells.

This two part document amplifies the MMS NAD 83 Implementation Plan outlined in the 56 FR 20020, May 1, 1991. The first part, "Project Plan for Implementing NAD 83 in the Minerals Management Service, Part I: Responsibilities and Timeframes," details the various aspects of implementation, organizational unit responsibilities, and estimated timeframes. The second part, "Project Plan for Implementing NAD 83 in the Minerals Management Service, Part II: Technical Aspects of Implementation," details specific technical aspects of the MMS conversion from NAD 27 to NAD 83 and identifies associated organizational unit responsibilities.

¹ The year in parenthesis after NAD 83 indicates the year of adjustment, with the main NAD 83 adjustment occurring in 1986. HARN adjustments will be dated sometime during the 1990's, with 199x indicating the year of adjustment is unknown at this time.

² Relative positioning is the location of features by relating their position in relation to known positions--e.g., well locations so many feet or meters south/north and east/west of block boundaries.

PROJECT PLAN FOR IMPLEMENTING NAD 83 IN THE MINERALS MANAGEMENT SERVICE

PART I Responsibilities and Timeframes

1. INTRODUCTION

1.1 Overview

Within the United States (U.S.), horizontal positioning data (latitude, longitude, and plane coordinate systems) have been successively based on a series of datums. On December 6, 1988, the Federal Geodetic Control Committee (FGCC) affirmed that the North American Datum 1983 (NAD 83) was the official civilian horizontal datum of U.S. surveying and mapping activities performed or financed by the Federal Government. Further, Federal civilian agencies engaged in surveying and mapping activities were directed to convert from the contemporary datums being used--most notably the North American Datum 1927 (NAD 27)³--to NAD 83 to the extent practicable, legally allowable and feasible. Formal notification of this action was published in Federal Register (FR) Notice 54 FR 25318, June 14, 1989.

In response to this policy mandate, the Minerals Management Service (MMS) has developed a NAD 83 implementation plan entitled "Minerals Management Service, North American Datum 1983 (NAD 83) Implementation Plan." The draft Plan was published in 55 FR 48929, November 23, 1990. The official MMS NAD 83 Implementation Plan was approved by the Director, MMS on April 23, 1991, and published in 56 FR 20020, May 1, 1991.

1.2. About the Project Plan Document

This two part document amplifies the MMS NAD 83 Implementation Plan outlined in the 56 FR 20020, May 1, 1991. The first part, "Project Plan for Implementing NAD 83 in the Minerals Management Service, Part I: Responsibilities and Timeframes," details the various aspects of implementation, organizational unit responsibilities, and estimated timeframes. The second part, "Project Plan for Implementing NAD 83 in the Minerals Management Service, Part II: Technical Aspects of Implementation," details specific technical aspects of the MMS converting from NAD 27 to NAD 83 and identifies

³ Although NAD 27 was in use for the conterminous 48 states and mainland Alaska, the Pribilof Islands (St. Paul and St. George), St. Matthew Island, and St. Lawrence Island in Alaska; Puerto Rico; the Virgin Islands; and the Hawaiian Islands were on separate or orphan datums.

associated organizational unit responsibilities.

The documents can be used independently. However, they are intended to be used in association with each other. Each document is cross-referenced to the companion document.

2. PROJECT PLAN

2.1. Introduction

The plan was developed in compliance with the March 27, 1989, directive from the MMS Deputy Associate Director for Offshore Leasing instructing the MMS Mapping & Survey Staff (MSS) to develop a proposed NAD 83 implementation plan with assistance from the Outer Continental Shelf (OCS) regional offices. This initial MMS NAD 83 Implementation Team (Team) evolved to include not only representatives from each of the four OCS regions and MSS, but also MMS Headquarters and Program Staffs, the Solicitor's Office, and the Offshore Systems Center (OSC).

The Team recommended a three-phase NAD 83 conversion effort designed to minimize transition difficulties. Planning area conversions to NAD 83 began in Fiscal Year (FY) 1991. Total MMS conversion to NAD 83 may require more than 10 years. (See Part I, Appendix B.) Each OCS region will determine its own planning area and/or sale area conversion timeframes; thus, NAD 83 implementation varies among and within OCS regions.

2.2. NAD 27 Cadastres

The NAD 27 offshore cadastres have formed the legal base for the MMS program on the OCS. MSS is the MMS office of responsibility for development, maintenance, and depiction of the offshore cadastres and calculations of official coordinates and areal measurements for projected and non-projected boundaries. There are five (5) separate and distinct NAD 27 offshore cadastres:

1. Leasing Maps (LM's) based on the Louisiana State Plane Coordinate System (SPCS) in a portion of the Central Gulf of Mexico Planning Area.
2. LM's based on the Texas SPCS in a portion of the Western Gulf of Mexico Planning Area.
3. LM's based on the California SPCS in a portion of the Channel Islands area in the Pacific OCS Region.
4. Official Protraction Diagrams (OPD's) based on a corrupted Universal Transverse Mercator (UTM) grid system in the remainder of the Gulf of Mexico OCS Region.
5. OPD's based on strict conformance to the parameters of a metric based UTM system in the remainder of the Pacific OCS Region and the entire Alaska and Atlantic OCS Regions.

Additional information on the evolution of these cadastres can be found in Part I, Appendix A.

2.3. Implementation Plan Phases I & II

Phases I and II occur primarily within the OCS regions. However, the MSS and the OSC will use these timeframes to develop tools and procedures necessary to implement NAD 83. Phased implementation affords an OCS region maximum flexibility in converting planning areas to NAD 83; an entire OCS region does not have to be converted in order for sales in individual planning areas to be held on NAD 83.

2.3.1. OCS Regions. As indicated in 56 FR 20020, May 1, 1991, these two phases provide time for OCS regions to identify the survey datum of their existing coordinate data and to ensure newly submitted data will be compatible⁴. A major difference between Phase I and Phase II is the datum on which datum-dependent data may be submitted to the Agency. During Phase I, NAD 27-based information will be permitted provided that the datum (i.e., NAD 27) is explicitly identified. In Phase II, data submitted to the agency must be referenced to NAD 83. Each OCS region will determine when it has completed each phase and is ready to implement NAD 83 for one or more planning areas. All OCS leasing will be conducted on NAD 27 until an OCS region implements Phase III for all or part of a planning area⁵.

Each OCS Regional Director will designate one or more regional representative(s) to the Team. In some OCS regions it may be appropriate for each major division (i.e., Leasing & Environment, Field Operations, Resource Evaluation, and Office of Program Services) to be represented. OCS regional Team members will represent a comprehensive regional position on all NAD 83 issues and concerns. (See Part I, section 2.3.5.) Two weeks after formal notification of a Team meeting, OCS Regional Directors will submit issues, concerns, and proposed agenda items, or negative responses, to the Chief, MSS in writing.

2.3.2. Headquarters and Program Staffs. Each Division Chief and Program Director will designate one or more representative(s) to the Team. Staff Team members will represent the staffs' position on all NAD 83 issues and concerns. (See Part I, section

⁴ From the inception of the offshore program until August 1, 1989 (54 FR 31737), one could confidently assume that BLM/MMS datum-dependent OCS cadastre coordinates and areal measurements referenced NAD 27. Conversely, one might expect to make the same assumption relative to datum-dependent information provided by industry to the BLM/MMS. However, after 1960 a variety of navigation and positioning systems came into use on the OCS, some referencing, or creating information on, other datums. Thus, unless the datum is specifically identified, especially on post-1960 datum-dependent coordinates and areal measurements, datum referencing could be to NAD 83, one of three World Geodetic Systems (WGS 60, WGS 72, or WGS 84), a local datum, etc.

⁵ In the MMS, normal NAD 83 implementation will be by entire planning areas. Implementation for less than an entire planning area **may** occur when offshore leasing activity is planned for a relatively small portion of a large planning area, e.g., the Gulf of Alaska Planning Area/Yakutat Subarea.

2.3.5.) Two weeks after formal notification of a Team meeting, Division Chiefs and Program Directors will submit issues, concerns, and proposed agenda items, or negative responses, to the Chief, MSS in writing.

The Office of Program Development and Coordination (OPDC) Supervisory Program Analyst will ensure that adequate resources, as identified by the Chief, MSS, are available each FY to accomplish the NAD 83 Annual Work Plan (AWP) developed by the Team. All funds to support the "MMS/U.S. Geological Survey (USGS) Agreement" (MMS/USGS Agreement) are to be available within the MSS budget for allocation via purchase order at the beginning of each FY. (See Part II, section 5.)

2.3.3. Mapping & Survey Staff (MSS). In Phases I and II MSS's NAD 83-related activities will be the development of data and products necessary for OCS regions to make the conversion from NAD 27 to NAD 83. These products consist primarily of NAD 83-based OPD's and Supplemental Official OCS Block Diagrams (SOBD's).

Usually, boundary computations will be completed before NAD 83-referenced OPD's are made available for release to the public. NAD 83 OPD's, SOBD's, Supplemental Official Composite Block Diagrams (SOCBD's), and Supplemental Official Lease Diagrams (SOLD's) will be provided to the OCS regions by the date agreed to by the Chief, MSS and the appropriate regional official. At the same time, the public will be advised of product availability through a Federal Register notice published by the MSS. (The MSS will advise the public that NAD 83 products are available through the appropriate OCS Regional Office(s).)

The Chief, MSS, or designated representative(s), will:

- Notify the OSC of needed OB2MIS/TIMS⁶ revisions within two workdays of problem identification.
- Chair an annual Team meeting in the third quarter of each FY to develop the following year's AWP and to address conversion issues and problems.
- Call special Team meetings to address specific problems or issues.
- Notify Team members of a Team meeting not less than one month (four weeks) in advance of the meeting date.
- Hold the required AWP planning meeting with USGS, Rocky Mountain Mapping Center (RMMC) not later than the third quarter of each FY. MSS will obligate all funds to support the MMS/USGS Agreement and AWP at the

⁶ When this document was written, the Offshore Block, Boundary, & MAP/OPD Information System (OB2MIS) was being converted to the Block and Boundary component of the MMS Technical Information Management System (TIMS). Unless a citation is OB2MIS-specific, throughout the remainder of this document, both OB2MIS and the Block and Boundary component of TIMS will be referred to as "B&B, TIMS."

beginning of each FY.

2.3.4. Offshore Systems Center (OSC). The MMS ability to meet proposed implementation timeframes, while adequately supporting existing offshore programs, is predominately dependent on the capabilities of two automated systems--B&B, TIMS and the Outer Continental Shelf Information System (OCSIS)⁷. B&B, TIMS is MSS's primary computational/database system.

The MMS implementation of NAD 83 is a dynamic process, and as such will necessitate the OSC making changes, revisions, enhancements, etc. to B&B, TIMS in a timely manner⁸. These capabilities include, but are not limited to:

- Datum transformations using the North American Datum Conversion (NADCON) v2.00, or later⁹, software.
- Geodesic and rhumb line computations using the "OCS5" programs, and geodesic line and grid intersection computations using the "OCS8" programs.
- Combined State Seaward Boundary computations using the "OCS2T" and "OCS3T" programs.
- SOCBD and SOLD preparation.
- Computation of coordinates for NAD 27 leasehold boundary (block boundary) intersections with the NAD 83 cadastre.

OSC will accommodate valid requests from MSS for B&B, TIMS revisions and updates on a priority basis. All sale-related requests will be accommodated so as not to cause a sale delay or cancellation.

Coordinate information in OCSIS is, and shall remain, referenced only to NAD 27. OCSIS will be superseded by TIMS; the pre-lease, lease administration, and block and boundary components of TIMS are scheduled for completion by June 1994, and will reference both NAD 27 and NAD 83. (See Part II, sections 3.6. - 3.6.2.)

The Manager, OSC will designate one or more Team representative(s) to present OSC's position on all NAD 83 issues and concerns. Within two weeks after formal

⁷ When this document was written, OCSIS was being converted into several major components of TIMS. In Part II, rather than cite each component, OCSIS and the TIMS components being derived from OCSIS, will be referred to as "TIMS(O)."

⁸ As used here, "timely manner" means consistent with the MSS meeting an OCS region's sale-related needs.

⁹ NADCON v2.00 is the first version to fully satisfy MMS OCS needs offshore of Alaska and the conterminous U.S. NADCON v2.10 is the first version to recognize the recently computed grids for the High Accuracy Reference Networks (HARN's).

notification of a Team meeting, OSC will submit issues, concerns, and proposed agenda items, or negative responses, to the Chief, MSS in writing.

2.3.5. MMS NAD 83 Implementation Team (Team). During conversion to NAD 83, the Team will meet at least annually to identify and address specific implementation issues (e.g., High Accuracy Reference Networks (HARN's)). This may require establishing subcommittees and/or representation from other disciplines on the Team. The Team will establish the mechanism for addressing these issues at the annual Team meeting or through telephone or FAX communications between annual meetings.

Each Team representative will comprehensively represent their regional, Headquarters, or program staff positions on all NAD 83 issues and concerns. When a consensus can not be achieved on an issue, Team members are expected to develop timely "compromises" that are in the best interest of the Agency.

2.3.6. Timeframes. Phase I began MMS-wide in April 1991, with the Director, MMS's approval of the Agency's NAD 83 Implementation Plan. Each OCS Regional Director will determine their own NAD 83 planning area and/or sale area implementation timeframes based upon MMS conversion experiences, leased areas, sale activities, and the 5-Year Schedule.

Timeframes for each OCS region's implementation phases can be found in Figure 2. These timeframes were not established as rigid periods of time; they are planning guidelines. For example, (1) the conversion of the Chukchi Sea Planning Area went from Phase I to Phase III, omitting Phase II in early 1992; (2) the Gulf of Mexico OCS Region has indicated that they will not implement NAD 83 until TIMS is complete and functioning.

| OCS Region | Phase I | Phase II | Phase III |
|----------------|-------------------|------------------|------------------------|
| Alaska | 1991 - 1992 | 1992 - 1993 | 1993 - 1996 |
| Atlantic | 1991 - 1992 | 1992 | 1992 - 1997 |
| Gulf of Mexico | 1991 →→→→→→→→→→→→ | →→→→→→→→→→→→→→→→ | →→→ until completed |
| Pacific | 1991 - 1993 | 1993 - 1995 | 1995 - until completed |

Figure 2. Projected OCS regional office NAD 83 implementation timeframes.

2.4. Implementation Plan Phase III

2.4.1. OCS Regions. Each OCS Regional Director will determine the timing for their OCS region to implement Phase III in planning areas--fully converting to NAD 83. Each OCS Regional Director will designate one or more regional representative(s) to the Team. OCS regional Team members will represent a comprehensive regional position on all NAD 83 issues and concerns. (See Part I, section 2.4.5.) Two weeks after formal notification of a Team meeting, OCS Regional Directors will submit issues, concerns,

and proposed agenda items, or negative responses, to the Chief, MSS in writing.

2.4.2. Headquarters and Program Staffs. Until NAD 83 is fully implemented by the Agency, each Division Chief and Program Director will continue to designate one or more representative(s) to the Team. Staff Team members will represent the staffs' position on all NAD 83 issues and concerns. (See Part I, section 2.4.5.) Two weeks after formal notification of a Team meeting, Division Chiefs and Program Directors will submit issues, concerns, and proposed agenda items, or negative responses, to the Chief, MSS in writing.

The OPDC Supervisory Program Analyst will be responsible for ensuring that adequate resources, as identified by MSS, are available each FY to complete the Agency's conversion to NAD 83. All funds to support the MMS/USGS Agreement are to be available within the MSS budget for allocation via purchase order at the beginning of each FY.

2.4.3. Mapping & Survey Staff (MSS). MSS will continue development of new NAD 83 OPD's and SOBD's until all planning areas have been converted. When requested by an OCS region, MSS will develop SOCBD's and SOLD's. (See Part II, sections 3.4. through 3.6. for procedures.)

The Chief, MSS, or designated representative(s), will:

- Notify OSC of needed B&B, TIMS revisions within two workdays of problem identification.
- Chair an annual Team meeting in the second quarter of each FY to develop the following year's AWP and to address conversion issues and problems.
- Call special Team meetings to address specific problems or issues.
- Notify Team members of a Team meeting not less than one month in advance of the meeting date.
- Hold the required AWP planning meeting with USGS, RMMC not later than the third quarter of each FY. MSS will obligate all funds to support the MMS/USGS Agreement and AWP at the beginning of each FY.

2.4.4. Offshore Systems Center (OSC). Until NAD 83 is fully implemented in the Agency, OSC will accommodate valid requests from MSS for B&B, TIMS revisions and updates on a priority basis. All sale-related requests will be accommodated so as not to cause a delay or cancellation of sales.

The Manager, OSC will continue to designate one or more representative(s) to the Team. The OSC Team member(s) will represent the OSC's position on all NAD 83 issues and concerns. (See Part I, section 2.4.5.) Two weeks after formal notification of

a Team meeting, the OSC will submit issues, concerns, and proposed agenda items, or negative responses, to the Chief, MSS in writing.

2.4.5. MMS NAD 83 Implementation Team (Team). Until NAD 83 has been fully implemented in the MMS, the Team will continue to meet at least annually to identify and address specific implementation issues. This may require establishing subcommittees and/or representation from other disciplines on the Team. The Team will establish the mechanism for addressing these issues at the annual Team meeting or through telephone or FAX communications between annual meetings.

Each Team representative will comprehensively represent their regional, Headquarters, or program staff positions on all NAD 83 issues and concerns. When a consensus can not be achieved on an issue, Team members are expected to develop timely "compromises" that are in the best interest of the Agency.

2.4.6. Timeframes. Planning Area conversion priorities will continue to be determined at the annual Team meeting. The target date for having all planning areas for Alaska, the conterminous U.S., and Hawaii converted to NAD 83 is the end of FY 2000. (See Part I, section 2.3.6.)

3. DATUM REFERENCING

In 54 FR 31737, August 1, 1989, the MMS advised the public that:

- The Agency had been referencing NAD 27 for all offshore coordinate and areal measurement computations.
- The Agency would cite the appropriate reference datum on pertinent documents.

Some examples of appropriate datum citations are:

- "The coordinate values appearing on/in this document were derived using NAD 27."
- "The coordinate values appearing on/in this document were derived using NAD 83 (1986)."¹⁰
- On maps, place NAD 27 or NAD 83 (1986) directly under the bar scale.
- On non-B&B, TIMS generated SOBD's, add "Datum: NAD 27" directly under "State Lease No." in the upper right corner of the block.

Ensuring the integrity of datum-dependent data developed, received, and/or disseminated by the MMS is an Agency-wide responsibility.

3.1. OCS Regions

The OCS regions must:

- Ensure that datum citations are an integral part of all pertinent documents, maps/graphics, and digital data provided to the public or other Federal/State government agencies.
- Identify and document the datum of all datum-dependent information held by the OCS regions.
- Incorporate datum identification into non-national computer systems containing datum-dependent data.
- Ensure that newly received data is compatible with existing data.

¹⁰ See Part II, section 2.1.5.

Current (1992) OCS regional policies¹¹ for submission of datum-dependent data to the Agency can be found in Figure 3.

| OCS Region | NAD 27 | NAD 83 | Datum of Survey |
|----------------|--------|--------|-----------------|
| Alaska | Yes | Yes | Not Required* |
| Atlantic | Yes | Yes | Not Required* |
| Gulf of Mexico | Yes | Yes | Not Required* |
| Pacific | * | * | Required* |

*Only the Pacific OCS Region requires datum-dependent data submissions on the original datum of survey--i.e., when NAD 27 is the original survey datum, NAD 27 data is acceptable. The other OCS Regions will accept transformed data when the transformation method has been identified.

Figure 3. Acceptable survey datums for datum-dependent data received by the MMS.

3.2. Headquarters and Program Staffs

All datum-dependent maps, graphics, digital data, etc. developed and/or disseminated by Headquarters or program staff offices must include appropriate datum citations.

3.3. Mapping & Survey Staff (MSS)

The MSS must:

- Include a datum citation on all new or revised OPD's, LM's, SOBD's, and SOCBD's.
- Include a datum citation on all SOLD's.
- Include a datum citation on all datum-dependent special computational and graphic products developed by the MSS.

3.4. Offshore Systems Center (OSC)

Datum identification must be incorporated into the Agency's national computer systems

¹¹ The regional policies were identified by regional Team representatives at the September 15-17, 1992, Team meeting.

for datum-dependent data.

4. IMPLEMENTATION PLAN UPDATES

The MMS implementation of NAD 83 is expected to be a long-term, dynamic process, requiring the release of periodic project plan updates. These documents will be available through the OPDC, the MSS, and the Public Affairs Office in each OCS region. Notice of availability of the updates will be published in the Federal Register.

5. INFORMATION TRANSFER

OCS regional, Headquarters, program staff, and OSC Team representatives are responsible for providing thorough briefings to their respective MMS units. Team representatives are responsible for training appropriate OCS regional, Headquarters, program staff, and OSC employees in the use of NAD 83 documents (OPD's, SOBD's, SOCBD's, and SOLD's) and procedures.

The MSS staff will be available to offices requesting assistance. They will also be available to confer with other agencies, coastal States, and the public sector concerning MMS NAD 83 implementation and computational techniques and methodology.

6. ADDITIONAL INFORMATION

Technical NAD 83-related questions and requests for information should be directed to:

Department of the Interior
Minerals Management Service
Chief, Mapping & Survey Staff Boundary Branch
P.O. Box 25165, MS 4424 4011
Denver, CO 80225-0165

Phone: (303) ~~236-7050~~ 275-7121

As official updates to the MMS NAD 83 Implementation Plan become available, they can be obtained from the Public Affairs Office in each OCS region or the OPDC in Herndon, Virginia:

Minerals Management Service
Alaska OCS Region
Public Affairs Office
949 East 36th Ave., Rm. 110
Anchorage, AK 99508-4302
Phone: (907) 261-4010

Minerals Management Service
Gulf of Mexico OCS Region
Public Affairs Office
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394
Phone: (504) 736-0557

Minerals Management Service
Office of Program Development
and Coordination
Supervisory Program Analyst
381 Elden St., MS 4400
Herndon, VA 22070-4817
Phone: (703) 787-1179

Minerals Management Service
Atlantic OCS Region
Public Affairs Office
381 Elden St., Suite 1109
Herndon, VA 22070-4817
Phone: (703) 787-1113

Minerals Management Service
Pacific OCS Region
Public Affairs Office
770 Paseo Camarillo
Camarillo, CA 93010
Phone: (805) 389-7520

7. APPENDIX A--BRIEF HISTORY OF THE EVOLUTION OF THE FIVE NAD 27 OFFSHORE CADASTRES

The Bureau of Land Management (BLM) developed five unique NAD 27-based OCS cadastres when the offshore program was administered by that Agency. The first three cadastres to support OCS oil, gas, sulphur, and salt leasing were:

- Cadastre 1 - LM's based on the Louisiana SPCS in a portion of the Central Gulf of Mexico Planning Area.
- Cadastre 2 - LM's based on the Texas SPCS in a portion of the Western Gulf of Mexico Planning Area.
- Cadastre 3 - LM's based on the California SPCS in a portion of the Pacific OCS Region's Channel Islands area.

The BLM believed that since these three States had previously developed LM's defined by their unique SPCS's, maintaining that system offshore in Federal waters would:

- Reduce confusion since some State leases were transferred to the Federal Government.
- Facilitate the resolution of legal issues associated with a common boundary.
- Maintain the status quo for existing litigation.

SPCS's have a major drawback, however. They were designed for use onshore or nearshore, and not offshore on the OCS. Thus, as the offshore program evolved and moved further from the shoreline, the limitations of SPCS's became more apparent. For example, offshore of Louisiana BLM had to use negative coordinates as they proceeded seaward. Further, the obligatory use of different SPCS's for each coastal State compounded computational problems.

To resolve these problems, BLM adopted the military's metric based UTM grid system and OPD's as a new foundation for the offshore cadastre. This worldwide system, may be used onshore or offshore with equal accuracy, and has a broad zone width. This last feature was desirable since it decreased the total number of zones needed to cover large areas. OPD's based on the UTM projection and grid systems are the foundation for the last two NAD 27 OCS cadastres.

Cadastre 4 is used in those areas of the Gulf of Mexico OCS Region not covered by LM's. However, this cadastre is not a "pure" UTM-based system. In developing this cadastre, BLM made three decisions which corrupted the cadastre. Although not recognized at the time, these decisions adversely affect coordinate and areal measurement computations:

- Certain UTM zone boundaries were shifted to eliminate (1) OPD's which depicted relatively few blocks or (2) fractional blocks along one side of a zone boundary.
- Since LM's were based on SPCS's and used English systems of measurement, the English systems of measurement would be used on the OPD's.
- UTM zone central meridians were shifted to better facilitate use of the English systems of measurement in a system designed to use metric measurements.

Cadastre 5 is used in those areas of the Pacific OCS Region not covered by LM's and in the entirety of the Alaska and Atlantic OCS Regions. Unlike Cadastre 4, this cadastre was not corrupted. It conforms to definitive UTM parameters and uses both metric coordinates and areal measurements.

8. APPENDIX B--PLANNING AREA CONVERSION PRIORITIES

8.1. Sale Related Planning Area Datum Conversion Priorities^a

| OCS Region/ Planning Area | Sale # | Sale Date | --Approx. # OPD's-- | | | MSS Target Completion Date ^d |
|------------------------------|-----------|--------------|---------------------|------------------------------|---------------------------|---|
| | | | # OPD's | Shore- lines ^b | Int. Bdys ^c | |
| <u>Alaska</u> | | | | | | |
| Beaufort Sea | 144 | 12/95 | 43 | 10 | 5 | 2/95 |
| Chukchi Sea | 148 | 6/96 | 23 | 6 | 7 | 2/94 |
| Cook Inlet/ Shelikof Str. | 149 | 9/94 | 7 | 7 | 0 | 10/93 |
| GOA (Yakutat) | 158 | 8/95 | 5 | 4 | 0 | 12/94 |
| Hope Basin | 159 | 7/97 | 12 | 9 | 4 | 9/95 |
| St. George | 153 | 12/96 | 16 | 7 | 0 | 3/95 |
| Total Alaska | | | 106 | 43 | 16 | |
| <u>Atlantic</u> | | | | | | |
| Mid-Atlantic | 164 | 10/96 | 24 | 11 | 0 | 11/94 |
| South Atlantic | 164 | 10/96 | 28 | 9 | 2 | 11/94 |
| Total Atlantic | | | 52 | 20 | 2 | |
| <u>Gulf of Mexico</u> | | | | | | |
| Eastern GOM | 151 | 10/95 | 24 | 12 | 4 | TBD |
| Total Gulf of Mexico | | | 24 | 12 | 4 | |
| <u>Pacific</u> | | | | | | |
| No Planning Areas | | | 0 | 0 | 0 | |
| Total Pacific | | | 0 | 0 | 0 | |
| Total Sale Related | | | 182 | 75 | 22 | |

^a "Comprehensive Program 1992 - 1997," April 1992.

^b The number of OPD's in a planning area which depict shorelines.

^c The number of OPD's in a planning area which depict international maritime boundaries.

^d Completed OPD's and SOBD's due to regional office. TBD = To Be Determined.

**8.2. Sale Related Official Protraction Diagram
Datum Conversions,
By OCS Region and Planning Area**

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|------------|--|--|---|
| Alaska | Beaufort Sea Sale 144 | NR04-01, NR04-02, NR05-01, NR05-02, NR05-03, NR05-04, NR06-01, NR06-02, NR06-03, NR06-04, NR06-06(?), NR07-01, NR07-02, NR07-03, NR07-04, NR07-05, NR07-06, NS04-03, NS04-04, NS04-05, NS04-06, NS04-07, NS04-08, NS05-03, NS05-04, NS05-05, NS05-06, NS05-07, NS05-08, NS06-03, NS06-04, NS06-05, NS06-06, NS06-07, NS06-08, NS07-03, NS07-04, NS07-05, NS07-06, NS07-07, NS07-08, NS08-05, NS08-07 | 1:250K: Teshekpuk, Harrison Bay, Beechey Point, Flaxman Island, Mt Michaelson, Barter Island, Demarcation Point, Canadian Quad east of Demarcation Point |
| Alaska | Chukchi Sea Sale 148 | NR02-02, NR02-04, NR02-06, NR02-08, NR03-01, NR03-02, NR03-03, NR03-04, NR03-05, NR03-06, NR03-07, NR03-08, NR04-03, NR04-04, NS02-04, NS02-06, NS02-08, NS03-03, NS03-04, NS03-05, NS03-06, NS03-07, NS03-08 | 1:250K: Point Hope, De Long Mts, Point Lay, Wainwright, Meade River, Barrow |
| Alaska | Cook Inlet/Shelikof Str. Sale 149 | NO04-06, NO05-01, NO05-02, NO05-03, NO05-04, NO05-05, NP05-08 | 1:250K: Ugashik, Karluk, Mt Katmai, Shelikof Str., Afognak, Iliamna, Seldovia, Kenai, Kodiak |
| Alaska | Gulf of Alaska (Yakutat Sub-Area only) Sale 158 | NO06-02, NO07-01, NO07-02, NO07-03, NO07-04, NP06-08, NP07-07(?) | 1:250K: Bering Glacier, Cordova, Icy Bay, Juneau, Middleton Island, Mt. Fairweather, Yakutat |
| Alaska | Hope Basin Sale 153 | NQ02-02, NQ02-04, NQ02-06, NQ03-01, NQ03-02, NQ03-03, NQ03-04, NQ03-05, NQ04-03, NQ04-05(?), NR02-08, NR03-07 | 1:250K: Teller, Shishmaref, Kotzebue, Candle(?), Selawik, Baird Mts(?), Noatak, Point Hope |
| Alaska | St. George Basin Sale 153 | NN02-02, NN02-04, NN02-06, NN02-08, NN03-01, NN03-03, NN03-05, NO02-03, NO02-04, NO02-05, NO02-06, NO02-07, NO02-08, NO03-03, NO03-05, NO03-07 | 1:250K: Pribilof Islands, Samalga Island, Umnak, Unalaska, Unimak, Amukta |
| Atlantic | Mid-Atlantic Sale 164 | NI18-01, NI18-02, NI18-03, NI19-01, NJ18-02, NJ18-03, NJ18-05, NJ18-06, NJ18-08, NJ18-09, NJ18-11, NJ18-12, NJ19-01, NJ19-04, NJ19-05, NJ19-06, NJ19-07, NJ19-08, NJ19-10, NK18-09, NK18-11, NK18-12, NK19-07, NK19-10 | 1:250K: Rocky Mount, Manteo, Currituck Sound, Chincoteague, Salisbury, Wilmington, Newark, New York, Hartford, Providence |

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|--|-------------------------------|--|---|
| Atlantic | South Atlantic Sale 164 | NH17-02, NH17-03, NH17-05, NH17-06, NH17-08, NH17-09, NH17-11, NH17-12, NH18-01, NH18-02, NH18-04, NH18-05, NH18-07, NH18-10, NI17-09, NI17-11, NI17-12, NI18-04, NI18-05, NI18-06, NI18-07, NI18-08, NI18-09, NI18-10, NI18-11, NI18-12, NI19-04, NI19-07 | 1:250K: Orlando, Daytona Beach, Jacksonville, Brunswick, Savannah, James Island, Georgetown, Cape Fear, Beaufort |
| GOM | Eastern GOM Sale 151 | NG16-02, NG16-03, NG16-05, NG16-06, NG16-08, NG16-09, NG16-11, NG16-12, NG17-01, NG17-04, NG17-05, NG17-07, NG17-08, NG17-10, NG17-11, NH16-05, NH16-06(?), NH16-08, NH16-09, NH16-11, NH16-12, NH17-04(?), NH17-07, NH17-10 | 1:250K: Dry Tortugas, Key West, Miami, West Palm Beach, Charlotte Harbor, Saint Petersburg, Tarpon Springs, Gainesville, Apalachicola, Tallahassee, Pensacola |
| <p>*Shading indicates OPD's with shorelines--e.g., NO02-08. (?) indicates OPD's which were not developed for projected boundary computations prior to NAD 83, but may be required for NAD 83 B&B, TIMS computations. An OPD may be in more than one planning area and is included in each one, e.g., NR02-08 (Point Hope West) is in both the Chukchi Sea and Hope Basin Planning Areas. EEZ OPD's are included with adjacent planning areas, e.g., NS 04-04.</p> <p>**All map names are 1:250,000-scale USGS National Mapping Program names, unless otherwise noted. In Alaska the 1:250,000-scale series will be used to develop the OPD shoreline plate, and the 1:000,000-scale series in the conterminous U.S. Although USGS maps may fall in multiple planning areas, they are only listed once in this table.</p> | | | |

8.3. Non-Sale Related Planning Area Datum Conversions As Recommended By the MMS NAD 83 Implementation Team^a

| OCS Region/ Planning Area | --Approx. # OPD's-- | | | MSS Target Completion Date ^e |
|-------------------------------|-------------------------|------------------------------|---------------------------|---|
| | # OPD's ^b | Shore- lines ^c | Int. Bdys ^d | |
| <u>Pacific</u> | | | | |
| Southern CA | 25 | 8 | 4 | TBD |
| Washington/Oregon | <u>24</u> | <u>10</u> | <u>4</u> | TBD |
| Total Pacific | <u>49</u> | <u>18</u> | <u>8</u> | |
| Total Non-Sale Related | 49 | 18 | 8 | |

^a Recommendations developed at the MMS NAD 83 Implementation Team meeting September 15-17, 1992.

^b The number of OPD's in a planning area, including OPD's adjoining EEZ areas, to be converted to NAD 83. If an OPD is in more than one planning area, it is included in each planning area.

^c The number of OPD's in a planning area which depict shorelines.

^d The number of OPD's in a planning area which depict international maritime boundaries.

^e Completed OPD's and SOBD's due to regional office. TBD = To Be Determined.

8.4. Non-Sale Related Official Protraction Diagram Datum Conversions, By OCS Region and Planning Area

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|---|-------------------------------|---|---|
| Pacific | Southern CA | NH10-01, NH10-02, NH10-03, NH10-05, NH10-06, NH11-01, NH11-04, NI09-03, NI10-01, NI10-02, NI10-03 , NI10-04, NI10-05, NI10-06 , NI10-07, NI10-08, NI10-09 , NI10-10, NI10-11, NI10-12, NI11-04, NI11-07, NI11-08, NI11-10, NI11-11 | 1:250K: San Diego, San Clemente Island, Santa Ana, Long Beach, Santa Rosa Island, Los Angeles, Santa Maria, San Luis Obispo, Mexican Quad to complete San Diego |
| Pacific | Washington/Oregon | NK09-02, NK09-03, NK09-05, NK09-06, NK10-01, NK10-02(?) , NK10-04 , NL09-02, NL09-03, NL09-05, NL09-06, NL09-08, NL09-09, NL09-11, NL09-12, NL10-01, NL10-04, NL10-05(?) , NL10-07, NL10-08(?) , NL10-10, NL10-11(?) , NM09-08, NM10-07 | 1:250K: Cape Blanco, Coos Bay, Newport, Vancouver, Hoquiam, Cape Disappointment, Copalis Beach, Cape Flattery, Salem(?), Roseburg(?), Canadian Quad to complete Cape Flattery, Quad W of Vancouver |
| <p>*Shading indicates OPD's with shorelines--e.g., NG14-03. (?) indicates OPD's which were not developed for projected boundary computations prior to NAD 83, but may be required for NAD 83 B&B, TIMS computations. An OPD may be in more than one planning area and is included in each one, e.g., NR02-08 (Point Hope West) is in both the Chukchi Sea and Hope Basin Planning Areas. EEZ OPD's are included with adjacent planning areas, e.g., NS04-04.</p> <p>**All map names are 1:250,000-scale USGS National Mapping Program names, unless otherwise noted. In Alaska the 1:250,000-scale series will be used to develop the OPD shoreline plate, and the 1:000,000-scale series in the conterminous U.S. Although USGS maps may fall in multiple planning areas, they are only listed once in this table.</p> | | | |

8.5. Planning Areas To Be Scheduled Later For Datum Conversion

| OCS Region/ Planning Area | --Approx. # OPD's-- | | | MSS Target Completion Date ^d |
|------------------------------------|-------------------------|------------------------------|---------------------------|---|
| | # OPD's ^a | Shore- lines ^b | Int. Bdys ^c | |
| <u>Alaska</u> | | | | |
| Aleutian Arc | 51 | 13 | 5 | TBD |
| Aleutian Basin | 12 | 0 | 6 | TBD |
| Bowers Basin | 18 | 0 | 3 | TBD |
| Gulf of Alaska (except Yakutat) | 35 | 15 | 4 | TBD |
| Kodiak | 19 | 5 | 0 | TBD |
| Navarin Basin | 9 | 0 | 5 | TBD |
| N. Aleutian Basin | 13 | 10 | 0 | TBD |
| Norton Basin | 13 | 9 | 5 | TBD |
| St. Matthew-Hall | 17 | 11 | 0 | TBD |
| Shumagin | 18 | 6 | 0 | TBD |
| Total Alaska | 205 | 69 | 28 | |
| <u>Atlantic</u> | | | | |
| Caribbean Dependencies | ? | ? | ? | TBD |
| North Atlantic | 19 | 8 | 7 | TBD |
| Straits of Florida | 11 | 5 | 8 | TBD |
| Total Atlantic | 30+ | 13+ | 15+ | |
| <u>Gulf of Mexico</u> | | | | |
| Central GOM | 16 | 6 | 2 | 1/94 ^e |
| Western GOM | 13 | 7 | 5 | 1/94 ^e |
| Total GOM | 29 | 13 | 7 | |
| <u>Pacific</u> | | | | |
| Central California | 15 | 5 | 0 | TBD |
| Pacific Dependencies | ? | ? | ? | TBD |
| Hawaii | ? | ? | 0 | TBD |
| Northern California | 16 | 7 | 0 | TBD |
| Total Pacific | 60+ | 25+ | 7+ | |
| Total Unscheduled | 266+ | 94+ | 43+ | |

^a The number of OPD's in a planning area, including OPD's adjoining EEZ areas, to be converted to NAD 83. If an OPD is in more than one planning area, it is included in each planning area.

^b The number of OPD's in a planning area which depict shorelines.

^c The number of OPD's in a planning area which depict international maritime boundaries.

^d Completed OPD's and SOBD's due to regional office. TBD = To Be Determined.

^e Populate B&B, TIMS with NAD 27 digital data.

**8.6. Official Protraction Diagram Datum Conversions
For Planning Areas To Be Scheduled Later,
By OCS Region and Planning Area**

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|------------|------------------------------------|---|--|
| Alaska | Aleutian Arc | NL01-01, NL60-03, NM01-01, NM01-02, NM01-03, NM01-04, NM01-05, NM01-06, NM01-07, NM01-08, NM02-01, NM02-02, NM02-03, NM02-04, NM02-05, NM02-06, NM02-07, NM02-08, NM03-01, NM03-03, NM03-05, NM58-02, NM58-04, NM59-01, NM59-02, NM59-03, NM59-04, NM59-05, NM59-06, NM60-01, NM60-02, NM60-03, NM60-04, NM60-05, NM60-06, NM60-07, NM60-08, NN01-07, NN01-08, NN02-06, NN02-07, NN02-08, NN03-03, NN03-05, NN03-07, NN59-05, NN59-06, NN59-07, NN59-08, NN60-07, NN60-08 | 1:250K: Seguam, Atka, Adak, Gareloi Island, Rat Islands, Kiska, Attu |
| Alaska | Aleutian Basin | NO01-05, NO01-06, NO01-07, NO01-08, NO59-08, NO60-02, NO60-03, NO60-04, NO60-05, NO60-06, NO60-07, NO60-08 | N/A |
| Alaska | Bowers Basin | NN01-01, NN01-02, NN01-03, NN01-04, NN01-05, NN01-06, NN02-01, NN02-03, NN02-05, NN59-02, NN59-03, NN59-04, NN60-01, NN60-02, NN60-03, NN60-04, NN60-05, NN60-06 | N/A |
| Alaska | Gulf of Alaska (except Yakutat) | NN06-02, NN06-04, NN06-06, NN07-01, NN07-02, NN07-03, NN07-04, NN07-05, NN07-06, NN08-01, NN08-02, NN08-03, NN08-04, NN08-05, NN09-01, NN09-03, NO05-02, NO06-01, NO06-02, NO06-03, NO06-04, NO06-06, NO06-08, NO07-05, NO07-06, NO07-07, NO07-08, NO08-03, NO08-04, NO08-05, NO08-06, NO08-07, NO08-08, NP06-07, NP06-08 | 1:250K: Seward, Blying Sound, Taku River, Sitka, Sumdum, Port Alexander, Petersburg, Craig, Ketchikan, Dixon Entrance, Prince Rupert |
| Alaska | Kodiak | NN05-01, NN05-02, NN05-03, NN05-04, NN05-05, NN05-06, NN05-07, NN05-08, NN06-01, NN06-03, NN06-05, NO05-04, NO05-05, NO05-06, NO05-07, NO05-08, NO06-03, NO06-05, NO06-07 | 1:250K: Trinity Islands, Kaguyak |
| Alaska | Navarin Basin | NO01-01, NO01-02, NO01-03, NO01-04, NP01-04, NP01-05, NP01-06, NP01-07, NP01-08 | N/A |
| Alaska | North Aleutian Basin | NN03-02, NN03-04, NN04-01, NO03-04, NO03-06, NO03-08, NO04-01, NO04-03, NO04-04, NO04-05, NO04-06, NO04-07, NO04-08 | 1:250K: Hagemester Island, Nushagak Bay, Naknek, Bristol Bay, Chignik, Stepovak Bay, Port Moller, Cold Bay, False Pass |

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|------------|-------------------------------|---|--|
| Alaska | Norton Basin | NP01-02, NP02-01, NP02-02, NP03-01, NP03-02, NP04-01, NQ02-07, NQ02-06, NQ02-08, NQ03-05, NQ03-07, NQ03-08, NQ04-07 | 1:250K: St Michael, Unalakleet, Norton Bay, Solomon, Nome |
| Alaska | St. Matthew-Hall | NO02-01, NO02-02, NO03-01, NO03-02, NO04-01, NP02-03, NP02-04, NP02-05, NP02-06, NP02-07, NP02-08, NP03-03, NP03-04, NP03-05, NP03-06(?), NP03-07, NP03-08 | 1:250K: St Matthew, Cape Mendenhall, Kuskokwim Bay, Goodnews Bay, Baird Inlet, Nunivak Island, Marshall (?), Hooper Bay, Black, Kwiguk, St Lawrence |
| Alaska | Shumagin | NM03-02, NM03-04, NM04-01, NM04-02, NM04-03, NN03-02, NN03-04, NN03-06, NN03-08, NN04-01, NN04-02, NN04-03, NN04-04, NN04-05, NN04-06, NN04-07, NN04-08, NO04-08 | 1:250K: Sutwik Island, Simeonof Island |
| Atlantic | Caribbean Dependencies | TBD | TBD |
| Atlantic | North Atlantic | NJ19-01, NJ19-02, NJ19-03, NJ20-01, NK19-01, NK19-02, NK19-03, NK19-04, NK19-05, NK19-06, NK19-07, NK19-08, NK19-09, NK19-10, NK19-11, NK19-12, NK20-10, NL19-11, NL19-12 | 1:250K: Chatham, Boston, Portland, Bath, Bangor, Eastport, Canadian Quad to complete Eastport and NK19-03 |
| Atlantic | Straits of Florida | NF17-01, NF17-02, NG17-02, NG17-03, NG17-05, NG17-06, NG17-08, NG17-09, NG17-10, NG17-11, NG17-12 | 1:250K: Ft Pierce, Quads to cover the islands between 24°N-28°N by 78°W-80°W, Cuban Quads to cover 23°N-24°N by 80°W-84°W |
| GOM | Central Gulf of Mexico | NG15-02, NG15-03, NG15-06, NG15-09, NG16-01, NG16-04, NG16-07, NH15-08(?), NH15-09(?), NH15-11(?), NH15-12, NH16-04, NH16-05, NH16-07, NH16-08, NH16-10 | 1:250K: Port Arthur, New Orleans, Breton Sound, Mobile 1:100K: Burrwood Bayou |
| GOM | Western Gulf of Mexico | NG14-03, NG14-06, NG14-09(?), NG15-01, NG15-02, NG15-04, NG15-05, NG15-08, NH14-12(?), NH15-07(?), NH15-08(?), NH15-10(?), NH15-11(?) | 1:250K: Brownsville, Port Isabel, Corpus Christi, Beeville, Bay City, Houston |
| Pacific | Central California | NI09-03, NI10-01, NI10-02, NI10-03, NJ09-05, NJ09-06, NJ09-09, NJ09-12, NJ10-04, NJ10-05, NJ10-07, NJ10-08, NJ10-10, NJ10-11, NJ10-12 | 1:250K: Monterey, San Francisco, Santa Rosa 1:100K: Santa Cruz |
| Pacific | Pacific Dependencies | TBD | TBD |
| Pacific | Hawaii | TBD | TBD |

| OCS Region | Planning Area/ Sale Number | OPD's in Planning Area* | National Mapping Program Maps** |
|---|-------------------------------|--|---|
| Pacific | Northern California | NJ09-02, NJ09-03, NJ09-05, NJ09-06, NJ10-01, NJ10-02, NJ10-04, NJ10-05, NK09-08, NK09-09, NK09-11, NK09-12, NK10-07, NK10-08(?), NK10-10, NK10-11(?) | 1:250K: Ukiah, Eureka, Crescent City, Weed(?), Redding(?), Quad W of Ukiah |
| <p>*Shading indicates OPD's with shorelines--e.g., NN03-02. (?) indicates OPD's which were not developed for projected boundary computations prior to NAD 83, but may be required for NAD 83 B&B, TIMS computations. An OPD may be in more than one planning area and is included in each one, e.g., NR02-08 (Point Hope West) is in both the Chukchi Sea and Hope Basin Planning Areas. EEZ OPD's are included with adjacent planning areas, e.g., NS04-04. TBD = To Be Determined.</p> <p>**All map names are 1:250,000-scale USGS National Mapping Program names, unless otherwise noted. In Alaska the 1:250,000-scale series will be used to develop the OPD shoreline plate, and the 1:000,000-scale series in the conterminous U.S. Although USGS maps may fall in multiple planning areas, they are only listed once in this table. N/A = Not Applicable. TBD = To Be Determined.</p> | | | |

9. APPENDIX C--ACRONYMS & ABBREVIATIONS

AWP - Annual Work Plan

B&B, TIMS - The Block and Boundary component of TIMS; See OB2MIS;
See TIMS

BLM - (U.S. Department of the Interior,) Bureau of Land Management

CA - California

EEZ - Exclusive Economic Zone

FGCC - Federal Geodetic Control Committee

FR - Federal Register

FY - Fiscal Year

GOM - Gulf of Mexico

GPS - Global Positioning System

LM - Leasing Map

MMS - (U.S. Department of the Interior,) Minerals Management Service

MMS/USGS Agreement - April 5, 1991, MMS/Geological Survey (USGS) Agreement

MSS - MMS, OPDC, Mapping & Survey Staff, formerly the Mapping & Survey Group
(MSG)

NAD 27 - North American Datum of 1927

NAD 83 - North American Datum of 1983

NADCON - North American Datum Conversion transformation software

OB2MIS - Offshore Block, Boundary, and MAP/OPD Information
System; See B&B, TIMS

OCS - Outer Continental Shelf

OCSIS - Outer Continental Shelf Information System; See TIMS(O)

OPD - Official Protraction Diagram

OPDC - Office of Program Development and Coordination

OSC - Offshore Systems Center

Part II - "Project Plan for Implementing NAD 83 in the Minerals Management Service,
Part II: Technical Aspects of Implementation"

RMMC - (USGS) Rocky Mountain Mapping Center

SOBD - Supplemental Official OCS Block Diagram (also referred to as a "Split Block")

SOCBD - Supplemental Official Composite Block Diagram

SOLD - Supplemental Official Lease Diagram

SPCS - State Plane Coordinate System

Team - MMS NAD 83 Implementation Team

TBD - To be determined

TIMS - Technical Information Management System

TIMS(O) - An all-inclusive reference in Part II to the several TIMS components into
which OCSIS is evolving; See OCSIS

U.S. - United States

USGS - (U.S. Department of the Interior,) Geological Survey

UTM - Universal Transverse Mercator