

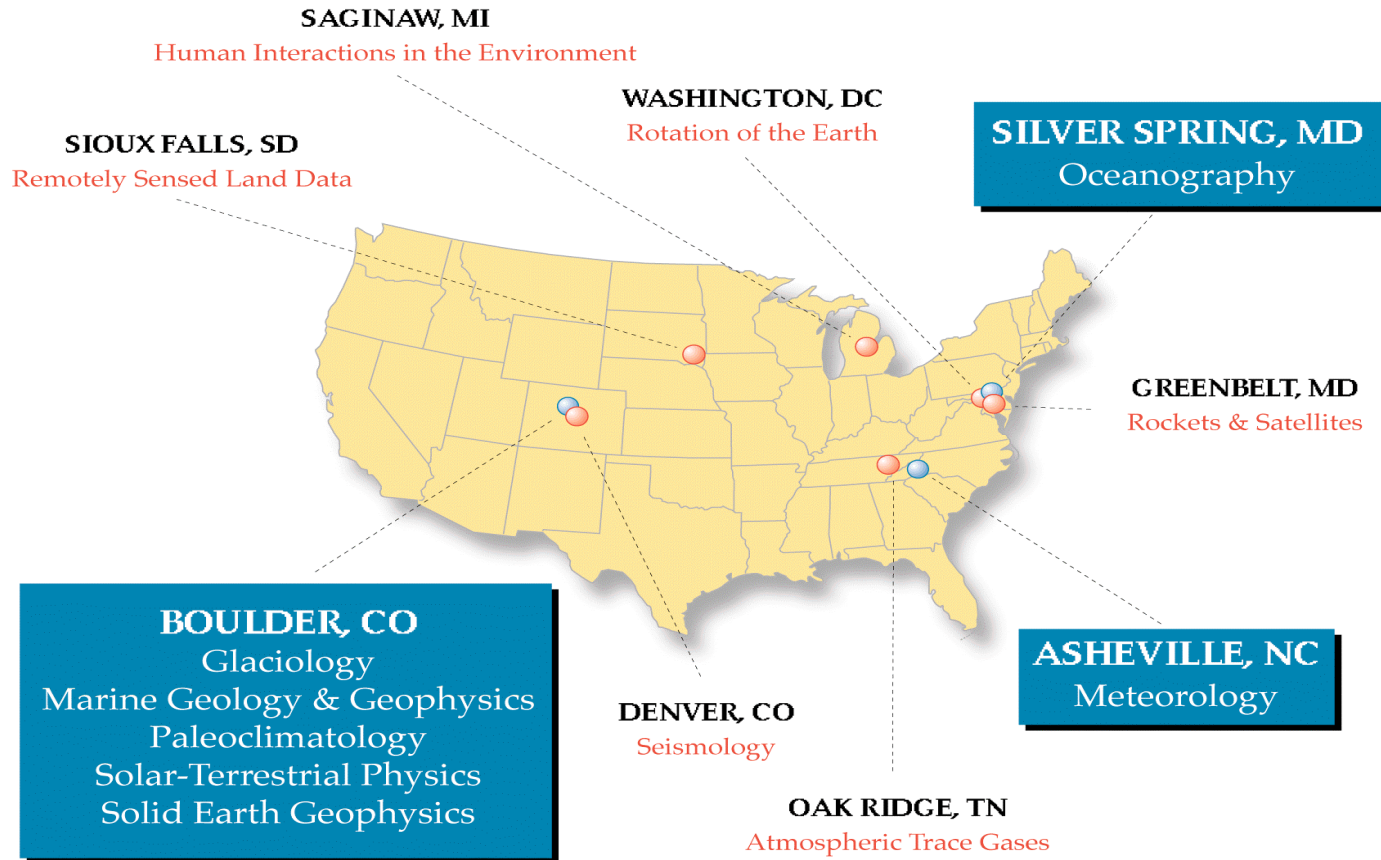


Environmental Data 21st Century Proliferation

“The Challenge”



WORLD DATA CENTER-A LOCATIONS





Atmospheric & Climatic Data

Geophysical Data

Oceanographic Data

NOAA National Data Centers

The banner is divided into three vertical panels. The left panel, titled "Atmospheric & Climatic Data", features a purple-tinted satellite image of Earth with a hurricane, a small inset of a pinkish sky, a photograph of a white building, and a line graph. The middle panel, titled "Geophysical Data", shows a black map of the United States, a glowing orange planet, and a colorful Earth globe. The right panel, titled "Oceanographic Data", includes a map of the world, a sailing ship, a photograph of a sea turtle, a vertical stack of three circular diagrams labeled "Tides/Predicted Sea Level Deviation" with dates "July 16, 1999", "July 22, 1999", and "July 28, 1999", a color-coded map of the United States, and a NOAA logo at the bottom right.



Access

- **Rapid**
- **Convenient**
- **On-Demand**



Influencing Factors



- **National Archive and Records Administration (NARA)**
- **Long-Term Stewardship**
 - ◆ **Keep Forever**
 - ◆ **In Perpetuity**
- **Access**
 - ◆ **All Data Past, Present, Future**



Media Storage

- **Archive and Access**
 - ◆ **Magnetic Tape (3480, 3590, 8mm)**
 - **Robotics (3590)/ Off-Line Tape Rack**
 - ◆ **Microfilm and Microfiche**
 - ◆ **Paper**

- **Access**
 - ◆ **CD-ROM (CD Juke Box and Off-Line)**
 - ◆ **Disk**



NNDC

NON-DIGITAL DATA ARCHIVE



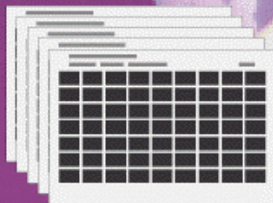
Manuscript / Autograph

200 Million Pages = 37,878 Miles
(1.5 times around the earth)



35mm & 16mm Film

125,129 Rolls = 2,340 Miles
(Washington to Los Angeles)



Microfiche

1.2 Million Pages = 114 Miles
(Washington to Philadelphia)



NNDC

DIGITAL DATA ARCHIVE





NNDC

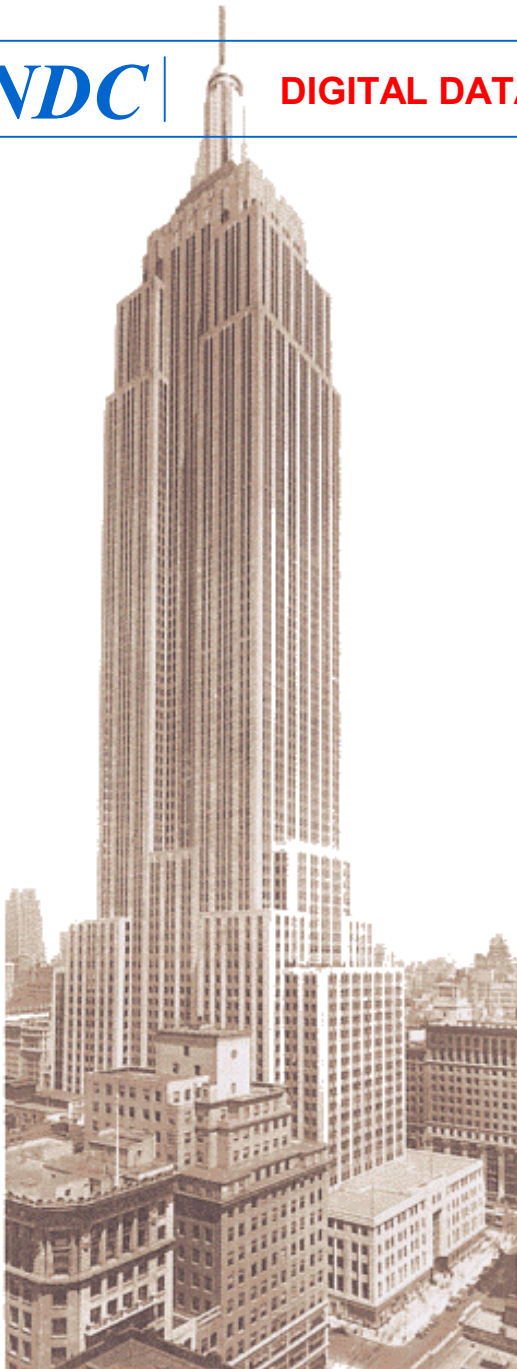
DIGITAL DATA ARCHIVE





NNDC

DIGITAL DATA ARCHIVE



NCDC's digital holdings would fill
1,000,000 CD-ROMs

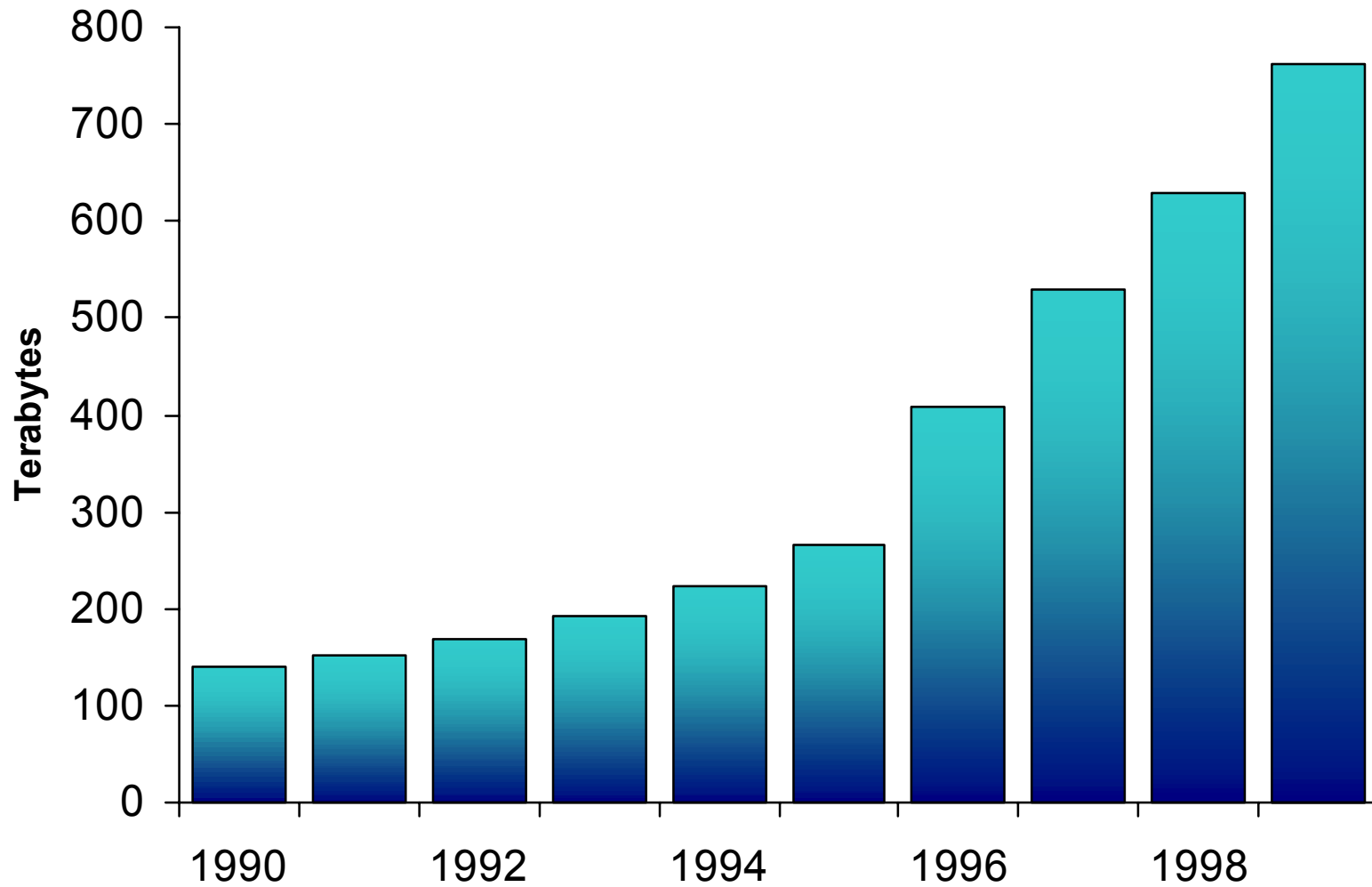
Approximately equal to a
stack of CDs the height of
5 Empire State buildings

and

60 times the volume
of data held by the
Library of Congress



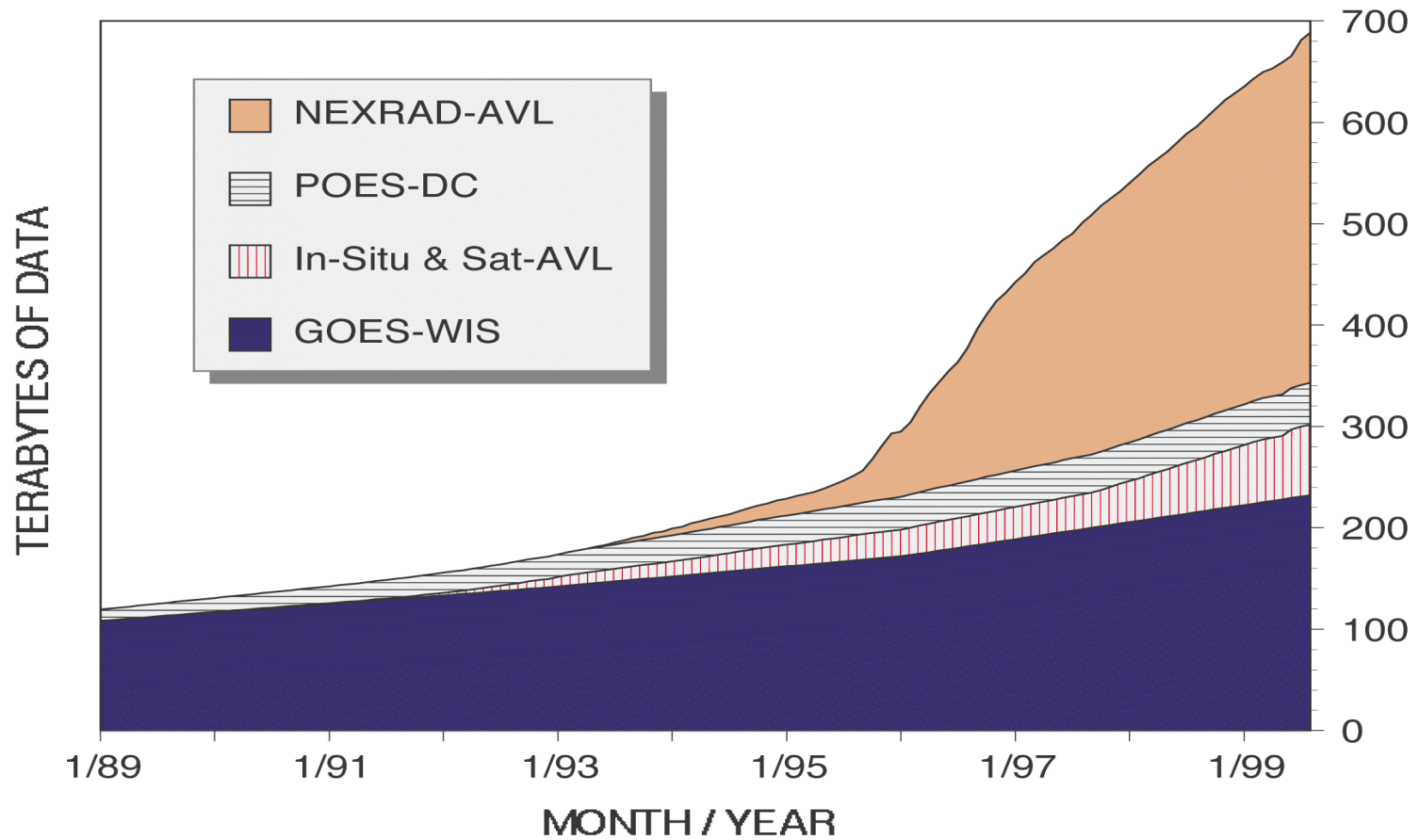
NNDC Archive Growth In the 1990's





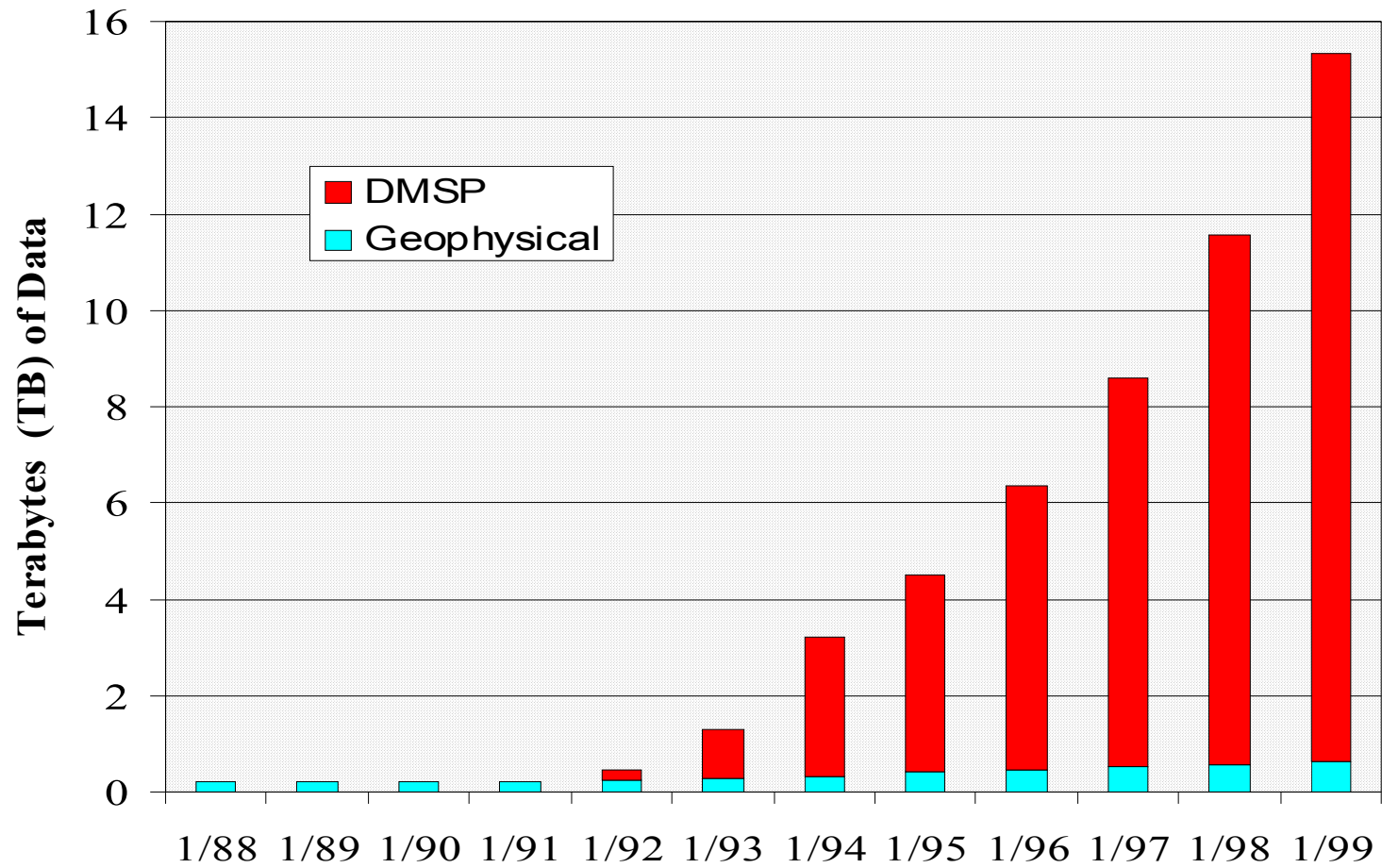
Quantity of Digital Data in the NCDC Archive

As of August 1999 – Total includes backup data



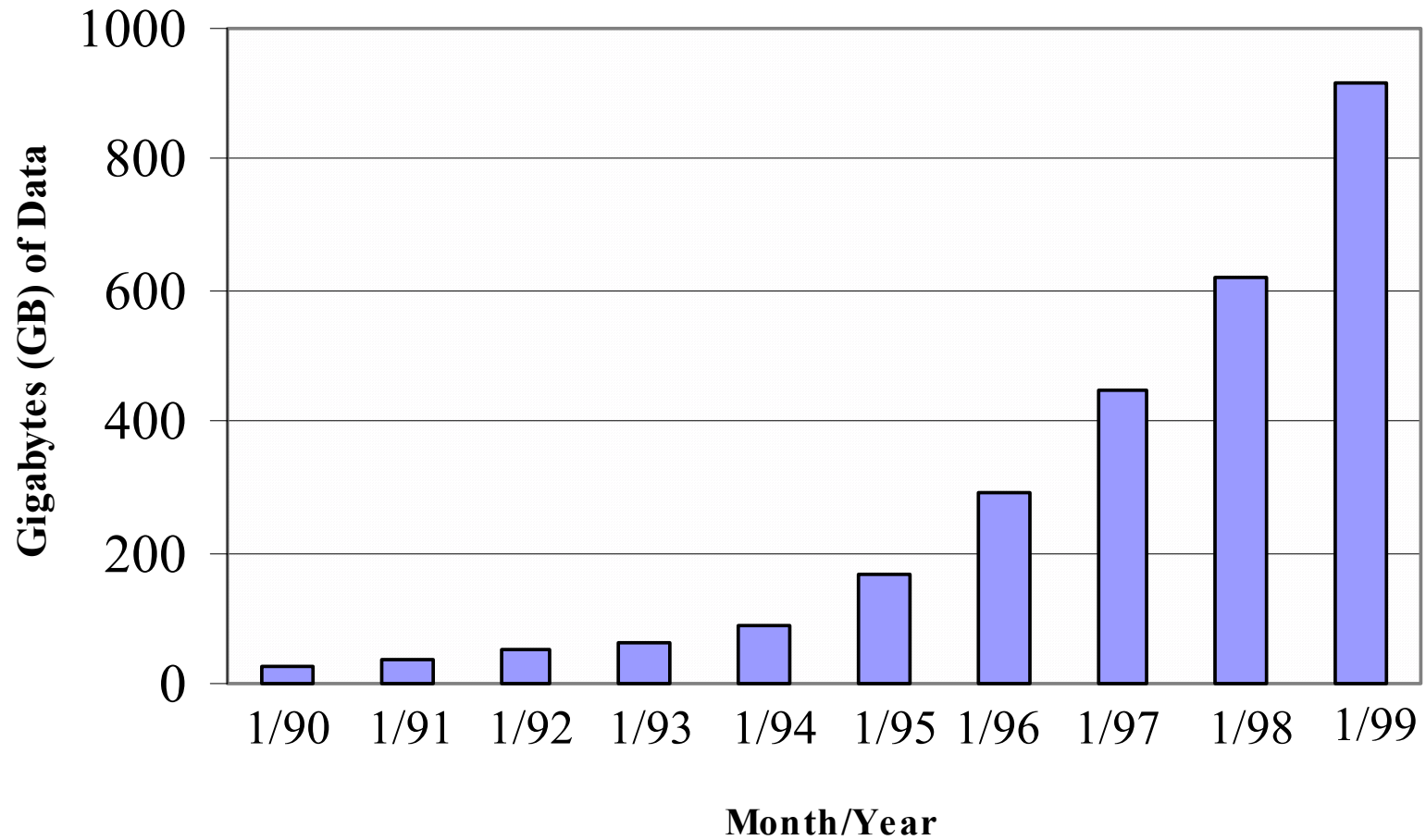


Quantity of Digital Data in the NGDC Archive





Quantity of Digital Data in the NODC Archive





Projected Data Volume Delivered to the NOAA National Data Centers (NNDC)

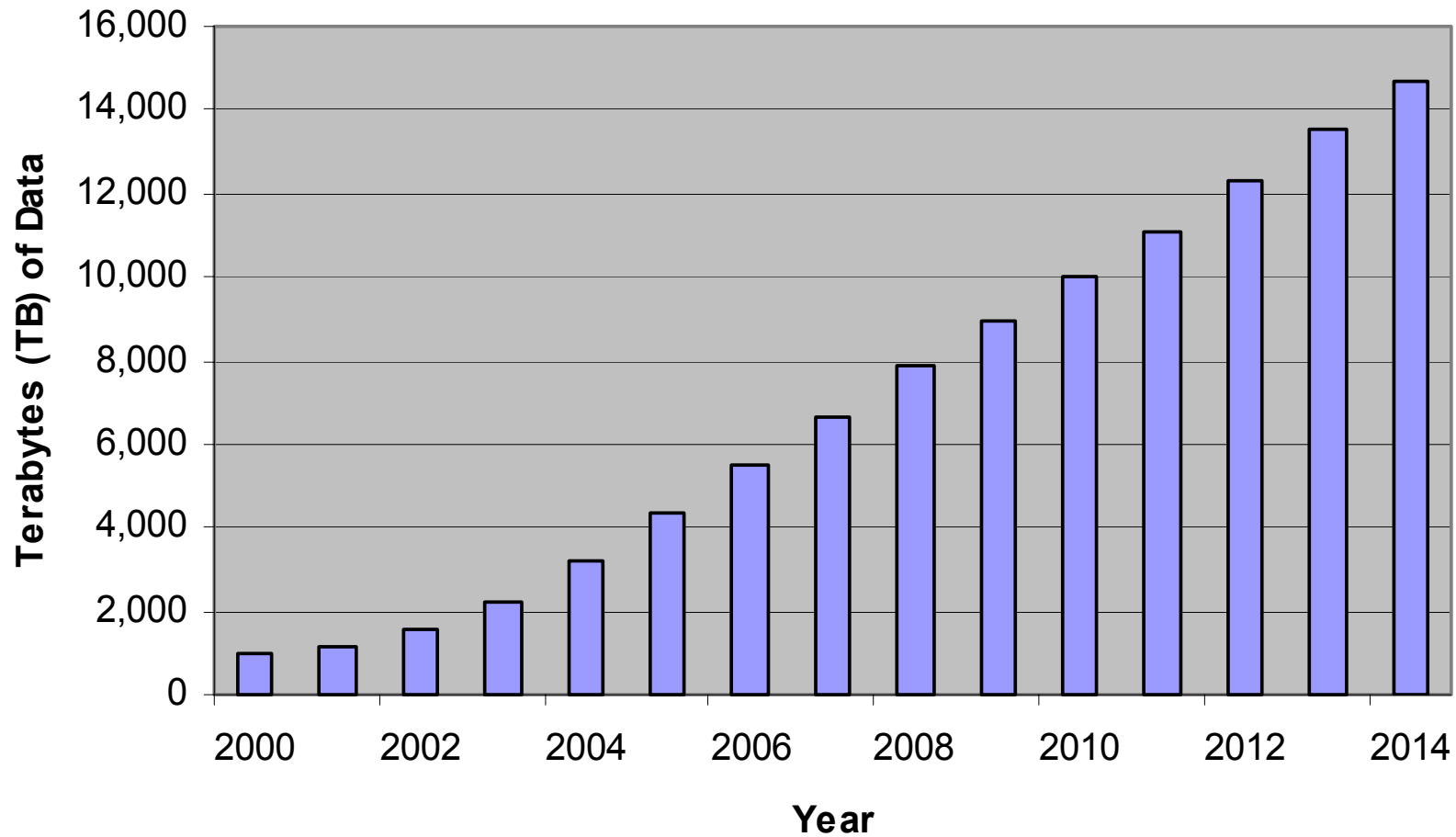
Satellite, Radar (NEXRAD), and In-Situ Observations (ASOS, AWOS, Marine, COOP, Radiosonde, Solar Radiation, Etc.)

(TeraBytes)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
EOS	0	1.46	196.52	379.91	636.76	639.75	640.56	640.48	469.48	274.66	23.92	25.2	24.92	24.89	22.73
NPP/TBD	0	0	0	0	0	173	173	173	173	173	173	173	173	173	173
NPOESS	0	0	0	0	0	0	0	0	228	228	456	456	456	456	456
METOP	0	0	0	28	28	28	28	28	28	28	28	28	28	28	28
POES	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0
GOES	36	36	36	36	36	36	36	36	36	36	72	150	300	300	300
NEXRAD	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
In situ	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
NCDC Total	176	178.46	374.52	586.91	844.76	1,021.75	1,023.56	1,024.48	1,080.48	886.66	900.92	981.2	1,131.92	1,132.89	1131.73
Addition															
NGDC Total	6.88	27.00	27.00	90.50	90.50	146.00	146.00	146.00	146.00	146.00	146.00	111.00	111	55	55.5
Addition															
NODC Total	2.22	3.15	4.65	5.65	7.68	8.68	10.66	12.71	14.70	18.70	20.72	21.74	22.74	23.76	25.76
Addition															
Cum Add	185	209	406	683	943	1176	1180	1183	1241	1051	1068	1114	1266	1212	1213
Last Year	763.15	948.25	1,156.86	1,563.03	2,246.09	3,189.03	4,365.46	5,545.68	6,728.87	7,970.05	9,021.41	10,089.05	11,202.99	12,468.65	13,680.30
Cum Total	948	1157	1563	2246	3189	4365	5546	6729	7970	9021	10089	11203	12469	13680	14893

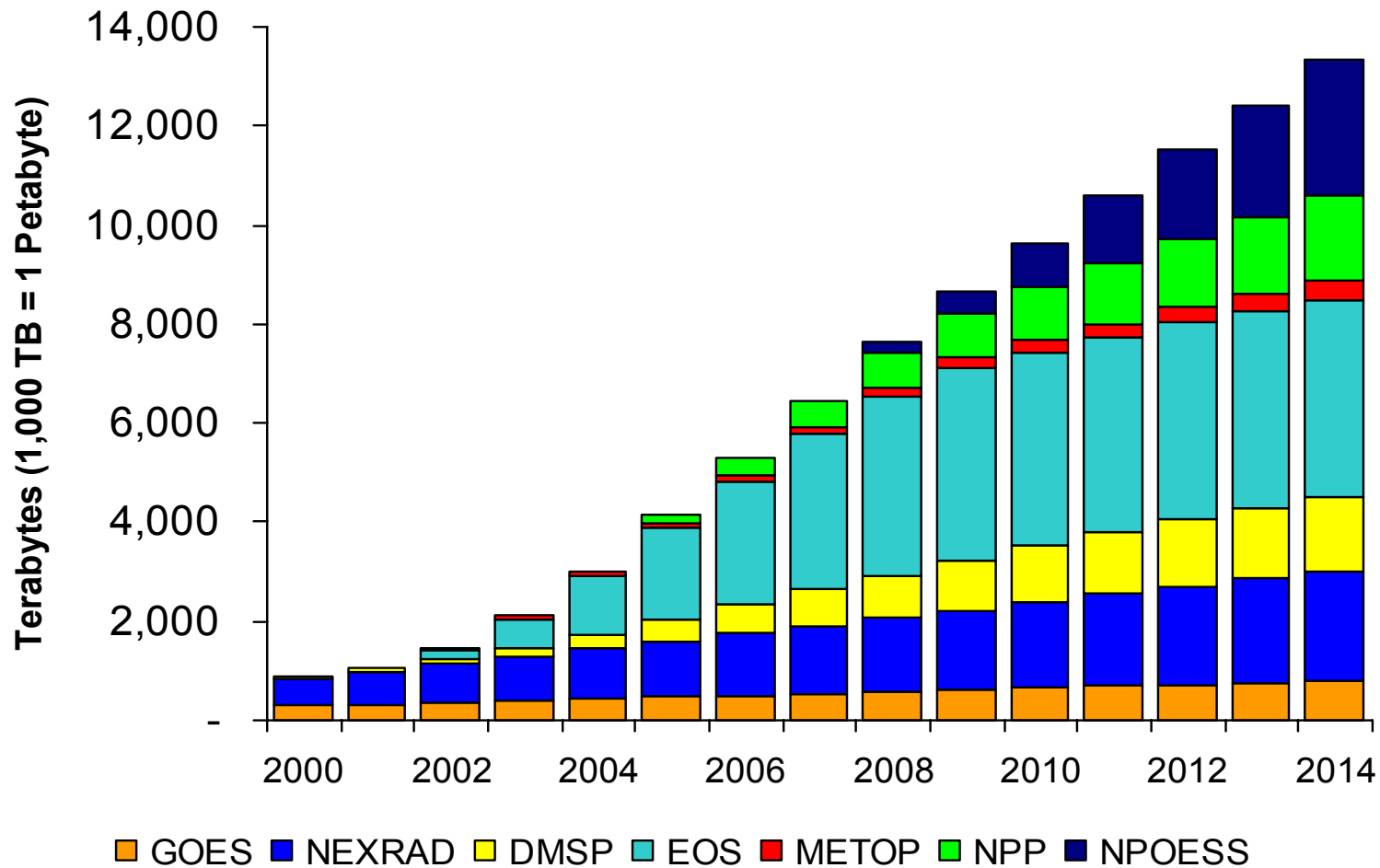


NNDC Digital Data Archive Projected Growth



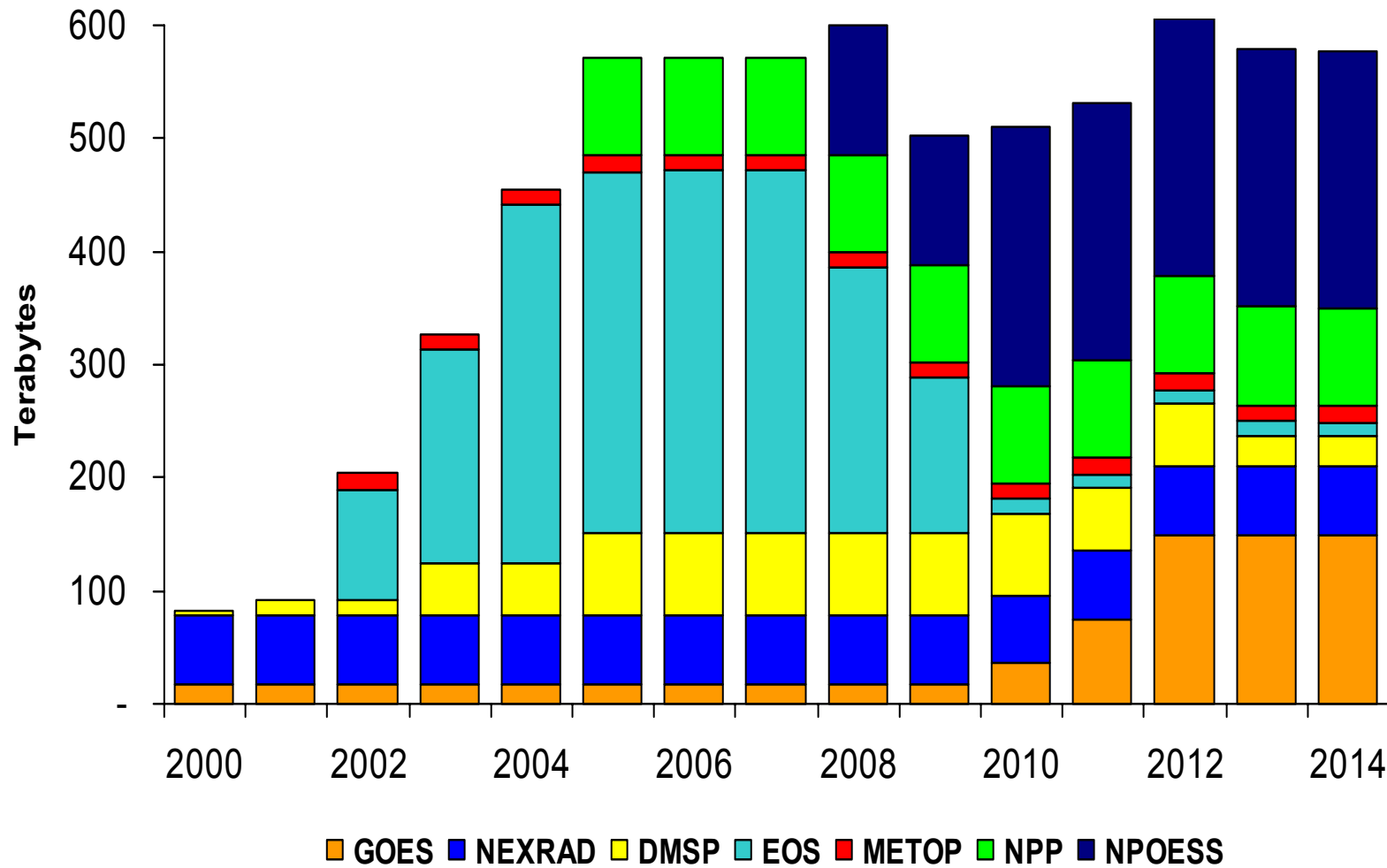


Major Systems Archive Growth 2000 - 2014





Major Remote Sensing Systems Estimated Annual Incoming Data Volumes*



*Volumes are not cumulative



Core Tasks

- **Digital Ingest**
- **Verify Receipt**
- **Create Inventories**
- **Quality Control Data**
- **Store Data**
- **Rapid Access/Delivery**



Core Tasks

Plus

- **Off-Line to Robotics**
- **Paper/Film to Digital Form**
- **Migrate to New Media**
- **Reprocess Data**

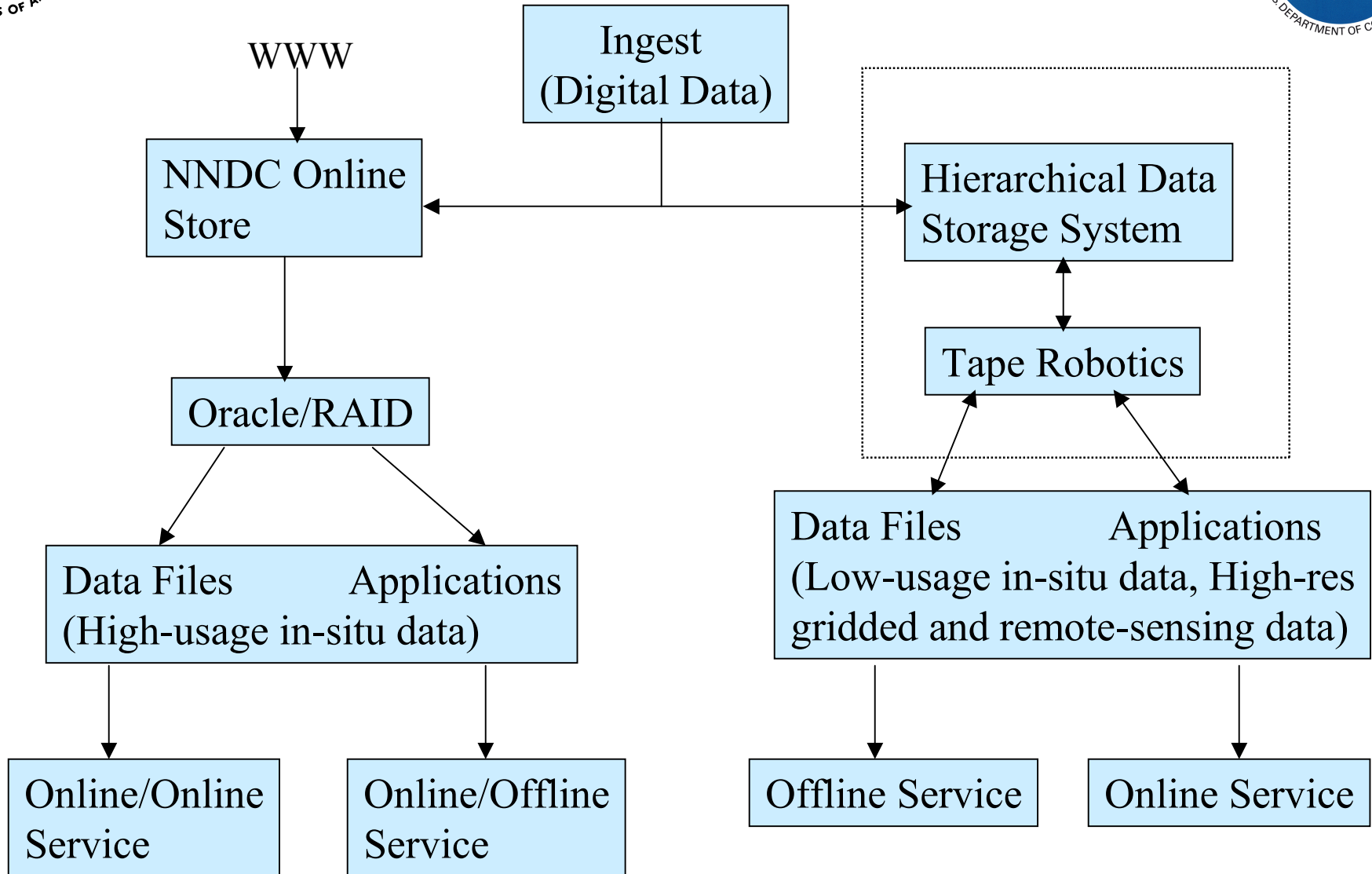


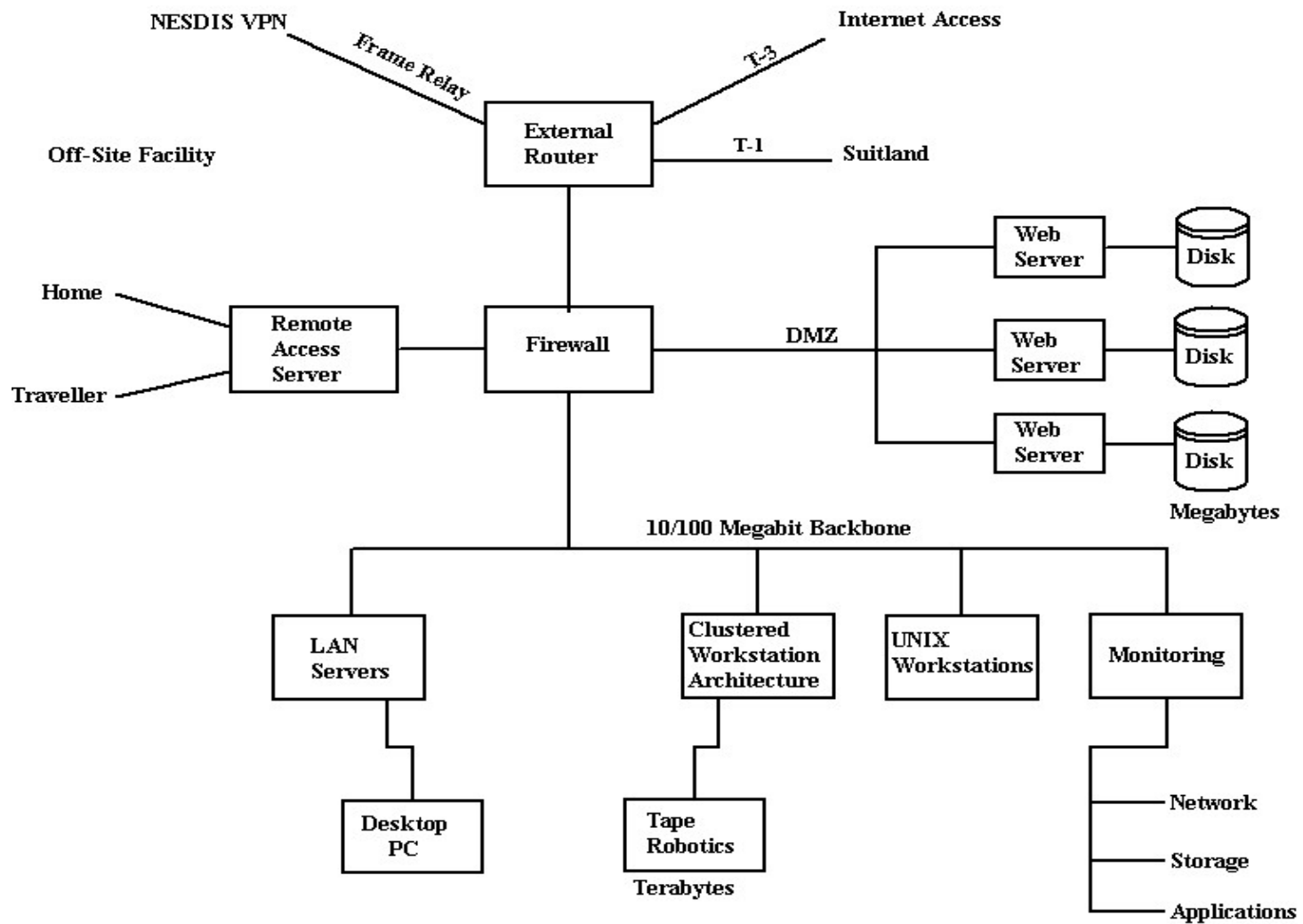
Network Centric Operations

- **Network Centric Data Flow**
- **Highly Automated Mass Storage**
- **High Capacity Storage**
- **Rapid/Convenient Access**
- **Rapid/Convenient Delivery**

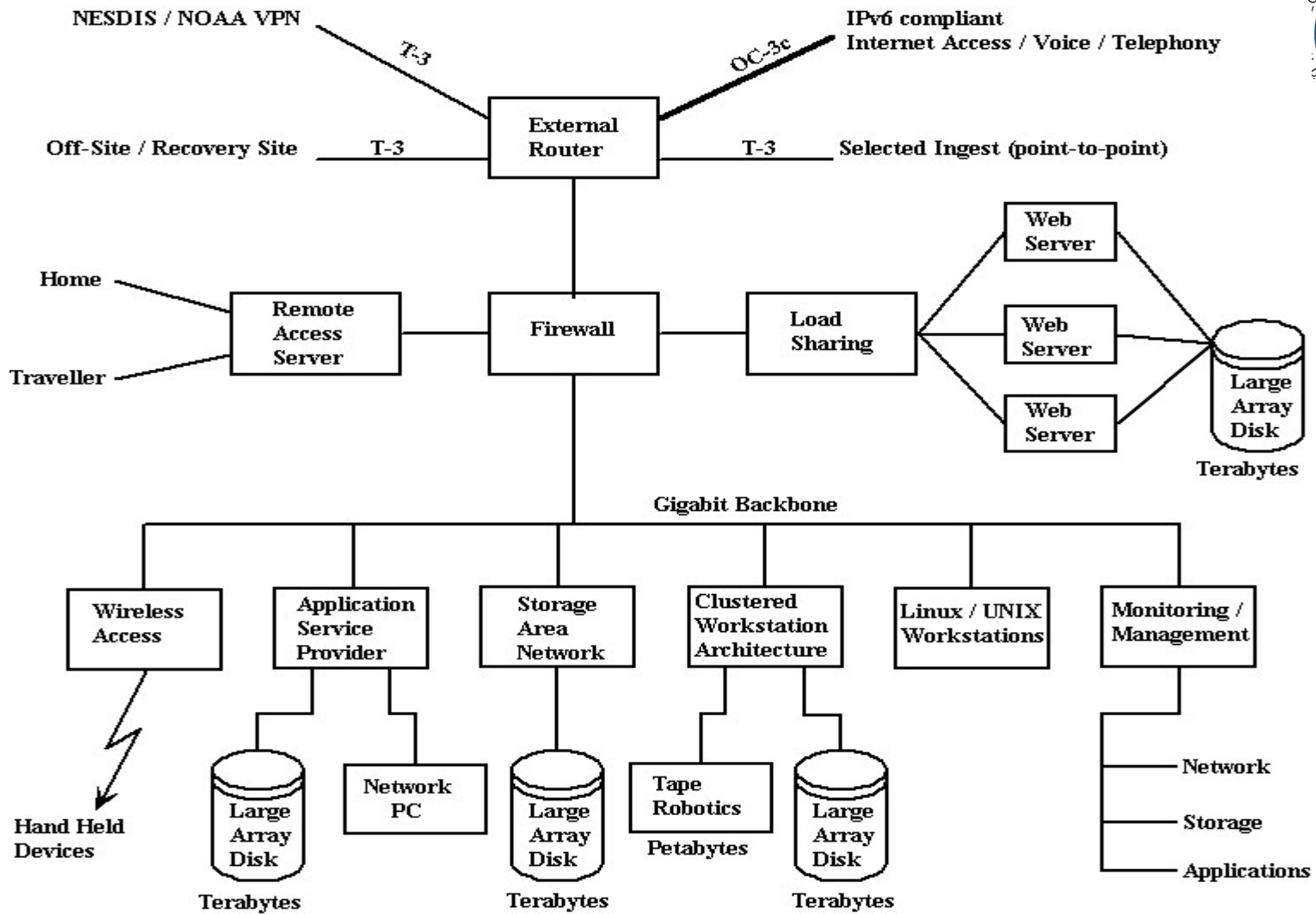


NNDC Data Access Systems





NCDC Current IT Configuration



NCDC 2005 IT Configuration



Access System

High Volume Storage

Network Centric Communications

Input/Output Access

Speed/Volume



Web Sites

NCDC - <http://www.ncdc.noaa.gov>

NGDC - <http://www.ngdc.noaa.gov>

NODC - <http://www.nodc.noaa.gov>