

**CHARACTERISTICS AND COMMON VULNERABILITIES
INFRASTRUCTURE CATEGORY: BANKING SYSTEM
PHYSICAL REPOSITORIES**

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Preventing terrorism and reducing the nation's vulnerability to terrorist acts requires understanding the common vulnerabilities of critical infrastructures, identifying site-specific vulnerabilities, understanding the types of terrorist activities that likely would be successful in exploiting those vulnerabilities, and taking preemptive and protective actions to mitigate vulnerabilities so that terrorists are no longer able to exploit them. This report characterizes and discusses the common vulnerabilities of United States Federal banking system physical repositories, which store currency and coin, process checks and electronic payments, and perform other functions that maintain a stable monetary system.

PHYSICAL REPOSITORY CHARACTERISTICS

Currency notes and coins in the United States (U.S.) are all produced by the Treasury Department. The Bureau of Engraving and Printing (BEP) produces currency notes, and the U.S. Mint is responsible for producing coins. The Treasury Department must produce currency and coins in quantities sufficient to fill the needs of the public.

The BEP has approximately 2,500 employees who work out of two buildings in Washington, D.C., and a facility located in Fort Worth, Texas. BEP functions include the following:

- Designing and manufacturing U.S. currency;
- Designing and manufacturing many postage stamps, customs stamps, and revenue stamps;
- Designing, engraving, and printing Treasury bills, notes and bonds, and other U.S. securities; and
- Designing, engraving, and printing commissions, permits, and certificates of awards.

The U.S. Mint in Philadelphia was the first federal building erected under the Constitution. The number of coins minted today is astounding. Denver and Philadelphia alone produce 65 to 80 million coins each day. The following paragraphs provide short descriptions of these and

other facilities belonging to the U.S. Mint and the activities and responsibilities undertaken at each facility.

**U.S. Mint Headquarters,
Washington, D.C.**

Functions performed at the U.S. Mint Headquarters include policy formulation and central agency administration, program management, research and development, marketing operations, customer services and order processing, operation of the Union Station sales center, business unit management, and all www.usmint.gov Web site services.



**Figure 1 Bureau of Engraving and Printing,
Washington, D.C.**

Philadelphia Mint, Pennsylvania

The nation’s first mint provides a wide array of coin and manufacturing services. The Philadelphia Mint houses operations for engraving of U.S. coins and medals, production of medal and coin dies, production of coins of all denominations for general circulation, production of the Philadelphia “P” mint mark portion of the annual uncirculated coin sets and commemorative coins authorized by Congress, production of medals, public tours, and maintenance of the facility’s sales center. The Philadelphia Mint is currently the only facility that engraves the designs of the U.S. coins and medals.

Denver Mint, Colorado

Functions at the Denver Mint include production of coins of all denominations for general circulation, production of coin dies, production of the Denver “D” mint mark portion of the annual uncirculated coin sets and commemorative coins authorized by the U. S. Congress, public tours, maintenance of the facility’s sales center, and storage of gold and silver bullion.

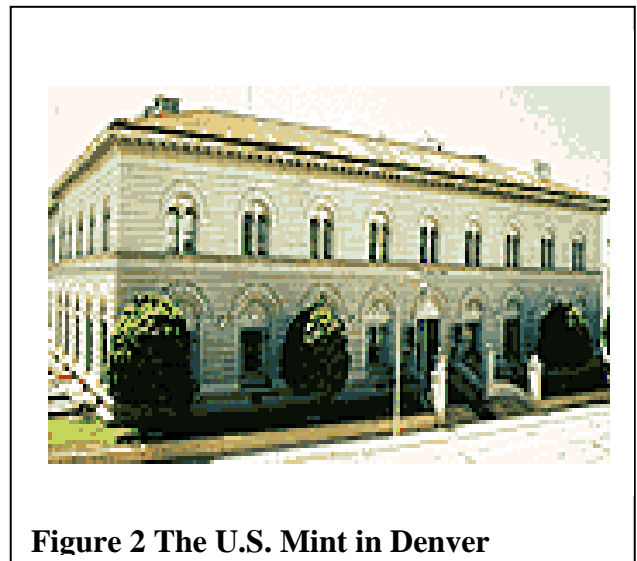


Figure 2 The U.S. Mint in Denver

In 1858, when gold was discovered in Colorado, hundreds of merchants, miners, and settlers moved in for their stake. A year later, the city of Denver was founded; in 1863, the U.S. government established a mint facility there. Today, the Denver Mint’s output can exceed 50 million coins a day.

San Francisco Mint, California

The San Francisco Mint plays an important role in our nation’s coinage. Although it does not currently produce circulating coins, it is the exclusive manufacturer of regular proof and silver proof coin sets that set the standard for numismatic excellence with their brilliant artistry, fine craftsmanship, and enduring quality.



Figure 3 The U.S. Mint in San Francisco

West Point Mint, New York

The West Point Mint produces all uncirculated and proof one-ounce silver bullion coins; all sizes of the uncirculated and proof American Eagle gold bullion and platinum bullion coins; and all silver, gold, platinum, and bi-metallic commemorative coins authorized by Congress. The West Point Mint, located near the U.S. Military Academy in the State of New York, also stores silver, gold, and platinum bullion.

U.S. Bullion Depository, Fort Knox, Kentucky

The Fort Knox Depository stores U.S. gold bullion and is located within the boundaries of the Fort Knox Military Reservation, about 30 miles southwest of Louisville, Kentucky.

The two-story Depository building is constructed of granite, steel, and concrete. The bullion is contained in a two-level steel and concrete vault with numerous compartments. Opening the 20-ton vault door requires several staff members, each of whom is entrusted with part of the set of combinations for the locking system. The vault casing, including the roof, is constructed of steel plates, I-beams, and cylinders laced with hoop bands encased in concrete.

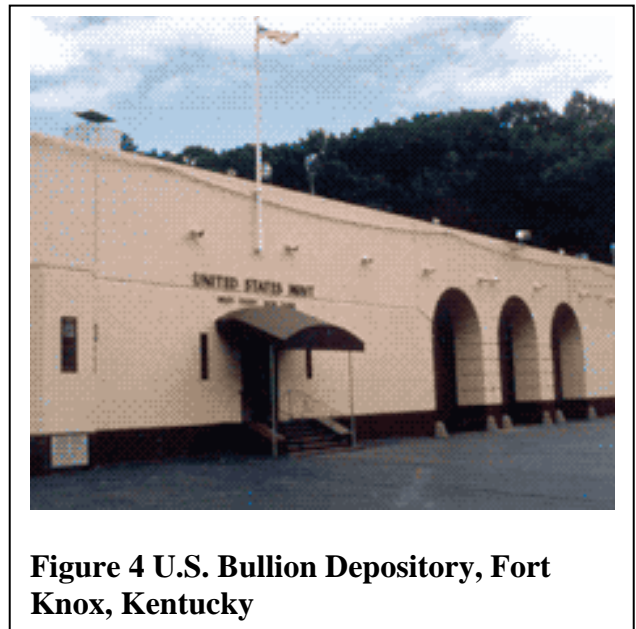


Figure 4 U.S. Bullion Depository, Fort Knox, Kentucky

The vault is surrounded by a corridor, and offices and storerooms line the outer wall of the Depository. The building walls are constructed of granite lined with concrete. Four guard boxes are connected to the corners of the Depository building. There are sentry boxes at the entry gate in the steel fence, and a driveway circles the Depository building. The building is equipped with its own backup power and water systems.

Federal Reserve Banks

Federal Reserve Banks are the operating arms of the Central Bank. They serve banks, the U.S. Treasury and, indirectly, the public. A Reserve Bank is often called a “banker’s bank,” storing currency and coin and processing checks and electronic payments. Reserve Banks also supervise commercial banks in their regions. As the bank for the U.S. government, Reserve Banks handle the Treasury’s payments, sell government securities, and assist with the Treasury’s cash management and investment activities. A network of 12 Federal Reserve Banks and 25 branches make up the Federal Reserve System under the general oversight of the Board of Governors in Washington, D.C.

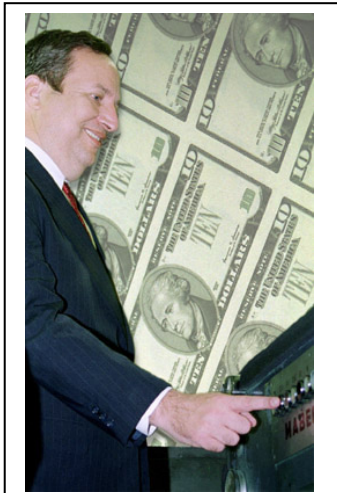


Figure 5 BEP Press Producing \$10 Bills

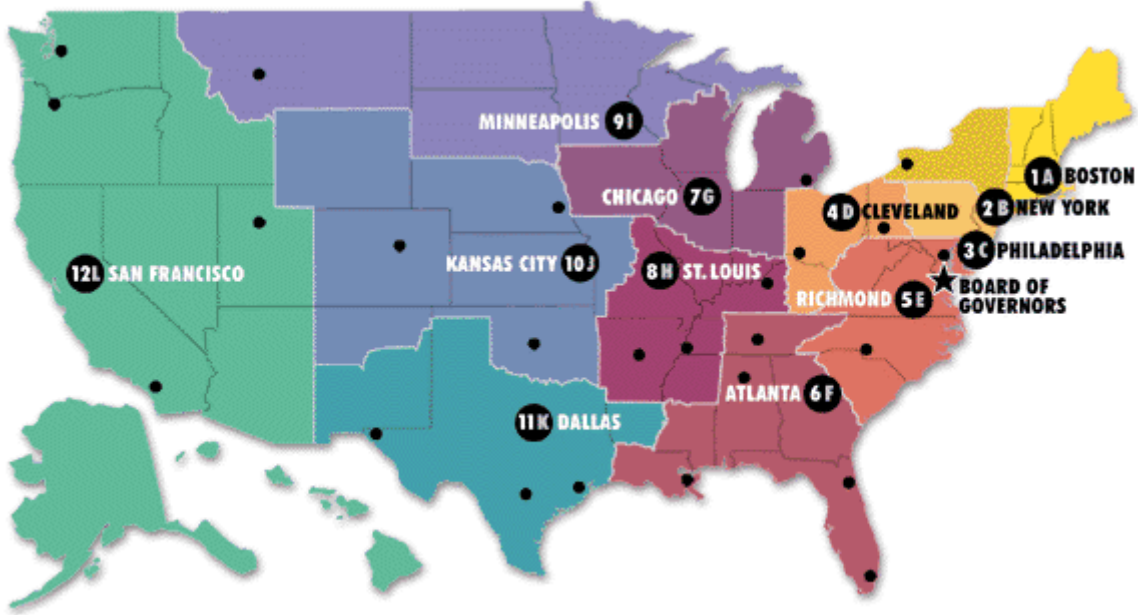
Each year, the currency departments at each of the 12 Federal Reserve Banks make recommendations as to future currency needs. The banks then place orders with the Comptroller of the Currency. The Comptroller reviews the requests and forwards them to the Bureau of Engraving and Printing. The BEP then produces the appropriate denominations of currency notes bearing the seal of the Federal Reserve Bank placing the order. These Federal Reserve notes are claims on the assets of the issuing Federal Reserve Bank and liabilities of the U.S. Government.

The law requires that each Federal Reserve Bank hold collateral that equals at least 100% of the value of the currency it issues. Most of that collateral is in U.S. Government securities owned by the Federal Reserve System. Collateral also includes gold certificates, special drawing rights, or other “eligible” paper, including bills of exchange or promissory notes and some foreign government or agency securities obtained by the Federal Reserve.

After production, the Treasury ships the coins and currency notes directly to Federal Reserve Banks and branches. The Federal Reserve then releases them as required by the commercial banking system. The demand for money by the public varies from week to week and from day to day. Banks are usually first to feel the impact of the public’s demand for cash. To meet the needs of the public, banks turn to the regional Federal Reserve Bank for coins and currency when their supplies are low.



Figure 6 Tourists Gather for a Tour of the Denver Mint



1 BOSTON	2 NEW YORK Buffalo	3 PHILADELPHIA	4 CLEVELAND Cincinnati Pittsburgh	5 RICHMOND Baltimore Charlotte	6 ATLANTA Birmingham Jacksonville Miami Nashville New Orleans
7 CHICAGO Detroit	8 ST. LOUIS Little Rock Louisville Memphis	9 MINNEAPOLIS Helena	10 KANSAS CITY Denver Oklahoma City Omaha	11 DALLAS El Paso Houston San Antonio	12 SAN FRANCISCO Los Angeles Portland Salt Lake City Seattle

Figure 7 Twelve Federal Reserve Banks and Their Branches

PROTECTION FORCE

The counterfeiting of money is one of the oldest crimes in history. During the Civil War, one-third to one-half of the currency in circulation was counterfeit. At that time, approximately 1,600 state banks designed and printed their own bills. Each bill carried a different design, making it difficult to detect counterfeit bills from the 7,000 varieties of real bills. A national currency was adopted in 1862 to resolve the counterfeiting problem. However, the national currency was soon counterfeited and circulated so extensively that it became necessary to take enforcement measures. Therefore, on July 5, 1865, the U.S Secret Service was established to suppress the widespread counterfeiting of this nation’s currency.

Although the counterfeiting of money was substantially suppressed after the establishment of the Secret Service, this crime still represents a potential danger to the nation’s economy. Today, counterfeiting is once again on the rise. One reason is the ease and speed with which large

quantities of counterfeit currency can be produced by using modern photographic and printing equipment. Today, three federal organizations, each described below, coordinate their efforts to protect the U.S. monetary system and facilities.

U.S. Secret Service

The Secret Service has exclusive jurisdiction for investigations involving the counterfeiting of U.S. obligations and securities. This authority to investigate counterfeiting is derived from Title 18 of the *United States Code*, Section 3056. Some of the counterfeited U.S. obligations and securities with which the Secret Service commonly deals include U.S. currency and coins, Treasury checks, Department of Agriculture food coupons, and U.S. postage stamps. The Secret Service remains committed to the mission of combating counterfeiting by working closely with state and local law enforcement agencies, as well as foreign law enforcement agencies, to aggressively pursue counterfeiters. To perform at the highest level, the Secret Service constantly reviews the latest reprographic/lithographic technologies to keep a step ahead of the counterfeiters. The Secret Service maintains a working relationship with the BEP and the Federal Reserve System to ensure the integrity of our currency.

Federal Bureau of Investigation

The Federal Bureau of Investigation (FBI) maintains a Financial Institution Fraud (FIF) group that concentrates its efforts on organized criminal groups involved in financial fraud. The areas of primary investigative interest to the FIF group include bank failures, identity theft, check fraud, counterfeit negotiable instruments, check kiting, and mortgage and loan fraud. FIF investigations related to emerging technologies and computer-related banking are taking on added significance among the nation's financial institutions. Organized criminal groups are often involved in the sale and distribution of stolen and counterfeit corporate checks, money orders, payroll checks, credit and debit cards, U.S. Treasury checks, and currency. Furthermore, the organized groups involved in check fraud and loan fraud schemes are often involved in illegal money laundering activities in an effort to conceal the proceeds from their crimes.

The FBI assists the nation's banking infrastructure in combating financial fraud through activities such as the inkless fingerprint program. The FBI works also closely with the federal banking regulatory agencies.

U.S. Mint Police

Responsibility for safeguarding U.S. gold and silver reserves lies with the U.S. Mint, which is part of the Treasury Department. The U.S. Mint Police are responsible for protecting government assets stored in the U.S. Mint facilities in Philadelphia, Pennsylvania; West Point, New York; Denver, Colorado; San Francisco, California; and Fort Knox, Kentucky. The Mint Police cooperate extensively with other law enforcement agencies. They use bicycle patrols around the mint facilities located in urban areas and have Special Response Teams that move among the facilities.

CONSEQUENCE OF EVENT

One of the key roles of the government is to maintain the stability of the nation's financial system and to address and contain systematic risk that may arise in the financial markets. The financial repositories play an important role in market stability. Several agencies of the government (U.S. Treasury, U.S. Mint, Federal Reserve Board, U.S. Secret Service, FBI) are involved in the supply, distribution, storage, and security of U.S. currency, coins, and other market transactions and clearing transactions.

Non-cash transaction services involve larger volumes than cash (coin and currency) transactions. They include check processing, Fedwire transactions, Automated Clearinghouse, and net settlement charges. The value of commercial checks processed alone is approximately 50 times larger than the volume of currency and coins. However, the cash and non-cash transactions work together in providing market stability. Without the currency and coin production and distribution system operating efficiently, the non-cash transactions would be greatly affected. Historically, during periods of financial instability, individuals and businesses convert investments into cash on hand, which could drain the amount of cash available.

One main source of financial system stability is the monetary policy set by the Federal Reserve Board. A severe banking crisis in 1907 led to the passage of the Federal Reserve Act, which established the Federal Reserve Banks. Over time, additional legislation—such as the Federal Deposit Insurance Corporation Improvement Act of 1991—has been added to assist in providing financial stability.

The Federal Reserve influences the nation's supply of money and credit. The initial link between monetary policy and the economy occurs in the market for reserves. Banks are required to maintain a certain amount of reserves, which can be in the form of coins and currency supplied by the U.S. Mint and BEP or reserve balances with the Federal Reserve Bank. Thus, the Federal Reserve Banks are crucial to the health of the banking and finance infrastructure, as well as U.S. economic stability. Disruptions in the Federal Reserve Banks, U.S. Mint repositories, or BEP facilities could cause market imbalances—leading to financial instability and panic.

Perhaps the most important supervisory responsibility of the Federal Reserve Board is to respond to a financial crisis by acting as lender of last resort for the nation's banking system. Through its "discount window," the Federal Reserve lends money to banks so that a shortage of funds at one institution does not disrupt the flow of money and credit in the entire banking system. Typically, the Federal Reserve makes loans to satisfy a bank's unanticipated needs for short-term funds. But the Federal Reserve also makes longer-term loans to help banks manage seasonal fluctuations in their customers' deposit or credit demands.

The activities of the Federal Reserve and the international economy influence each other. Not only do Federal Reserve policies shape and get shaped by international developments, the U.S. Central Bank also participates directly in international affairs. The U.S. participates in the International Monetary Fund and Central Banks in other countries. Because of the high level of interdependence in the global economy, market instabilities in the U.S. could quickly cascade to other countries.

COMMON VULNERABILITIES

Critical infrastructures and key assets vary in many characteristics and practices relevant to specifying vulnerabilities. There is no universal list of vulnerabilities that applies to all assets of a particular type within an infrastructure category. Instead, a list of common vulnerabilities has been prepared, based on experience and observation. These vulnerabilities should be interpreted as possible vulnerabilities and not as applying to each and every individual facility or asset.

The following is a list of common vulnerabilities found in U.S. banking system facilities.

Exhibit 1 Economic and Institutional Vulnerabilities	
<i>Economic and institutional vulnerabilities are those that would have extensive national, regional, or industry-wide consequences if exploited by a terrorist attack.</i>	
1	Disruption or degradation of the Federal Reserve banking system could lead to nationwide and international loss of confidence and may lead to unmet monetary demands.
2	Without the currency and coin production and distribution system operating efficiently, non-cash transactions would be greatly impacted.

Exhibit 2 Site-Related Vulnerabilities	
<i>Site-related vulnerabilities are conditions or situations existing at a particular site or facility that could be exploited by a terrorist or terrorist group to do economic, physical, or bodily harm or to disable or disrupt facility operations or other critical infrastructures.</i>	
Access and Access Control	
1	Many, if not most, of the financial institutions mentioned are located in medium to large urban areas.
2	Setback is often a short distance from public streets and, in some cases, rail lines.
3	Perimeter alarm systems may not provide early warning of an intruder or attack.
4	Lighting may be inadequate in certain parts of the facility (e.g., too little, poorly spaced, or improperly directed).
5	Window treatments, such as Mylar, to minimize the effects of a bomb blast have not been installed.
6	Air intakes for heating, ventilation, and air-conditioning (HVAC) systems may be accessible from the outside.
7	Identifiable logos and exterior signage may be posted.
	<i>(Continued on next page.)</i>

DRAFT – SENSITIVE HOMELAND SECURITY INFORMATION
LAW ENFORCEMENT SENSITIVE

Operational Security	
8	Extensive background investigations may not be conducted on new employees.
9	Periodic renewal background investigations may not be conducted for current employees.
10	Contractors and vendors are admitted to the facilities.
11	Federal Reserve Bank branches receive numerous packages daily; delivered by contracted couriers hired by member banks.
12	Mail and package screeners may not have adequate equipment and training.
13	Institutions may use outside contractors to design, install, and maintain screening systems.
14	State-of-the-art security systems may not be employed because of a lack of knowledge and for cost savings.
15	Although usually employed directly by the financial institution, members of the security guard force have no more authority than a commercial or private security guard and are subject to the individual state’s laws governing private security guards.
16	The amount and intensity of officer training vary from facility to facility, and in some cases, only meet the state’s minimum standards for a private security guard.
17	Guard force may not be trained or equipped to thwart an organized terrorist attack.
18	Guard force may not be trained or equipped to handle a chemical/biological attack.
19	Backup communications with local police authorities may not be sufficient when land lines are down.
20	Communications within the security guard force may be inadequate because of frequency sharing (with maintenance personnel in many cases) or outdated equipment.
21	Written emergency response plans for outside police and fire departments may not include financial institutions.
22	Outside law enforcement agencies may not be able to share Intelligence with the institution’s security guard force.
Other System Operation Considerations	
23	Data systems may be vulnerable to a cyber attack.
24	Backup for information systems may not be robust.
25	Lack of off-site storage for digital media spare parts could potentially delay repair of the system.
	<i>(Continued on next page.)</i>

Exhibit 3 Interdependent Vulnerabilities	
<i>Interdependency is the relationship between two or more infrastructures by which the condition or functionality of each infrastructure is affected by the condition or functionality of the other(s). Interdependencies can be physical, geographic, logical, or information-based.</i>	
Energy and Utilities	
1	Loss of electricity, natural gas, or water supplies may reduce or shut down minting operations.
2	Electric substations owned by local utilities that serve the institution are generally unmanned and remote.
3	Electric substations are easily identified by entry and exit of large, high-voltage wires.
4	Although usually enclosed by a fence, critical equipment at electric substations can be easily identified from off site.
5	Electric substations are usually surrounded by property belonging to third parties; the owner or electric utility has little or no control or cooperation.

USEFUL REFERENCE MATERIAL

1. U.S. Mint [<http://www.usmint.gov>].
2. Bureau of Engraving and Printing [<http://www.moneyfactory.com/>].
3. Federal Reserve Board [<http://www.federalreserve.gov/>].
4. U.S. Treasury [<http://www.ustreas.gov/>].