

Bureau of Engraving and Printing
**Future Workplace
Recommendations
Report**

FINAL

17 AUGUST 2017



STRATEGIC ANALYSIS FOR THE
**BUREAU OF ENGRAVING AND
PRINTING**

Bureau of Engraving and Printing Future Workplace Recommendations Report

Created by Interior Architects [IA] and the General Services Administration [GSA] for the Bureau of Engraving and Printing



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EXECUTIVE SUMMARY

1.1 EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

OVERVIEW

The General Services Administration (GSA), Public Buildings Service (PBS), and National Capital Region (NCR) has contracted IA Interior Architects (IA) to provide Workplace Strategy Services for The Bureau of Engraving and Printing (BEP) to create a sustainable workplace strategy for the efficient and economical use of space and to support other real property objectives.

PROJECT BACKGROUND

The BEP has approximately 1,550 employees housed in three buildings: The Main Building at 301 14th and C Street Southwest Washington DC, The Annex Building at 300 14th and C Street Southwest Washington DC, and a Warehouse in Landover, MD. BEP intends to reduce its office UR to 180 USF per person in accordance with its lease prospectus authority for these requirements and vacate all occupied space in the Annex Building and Warehouse.

The General Services Administration seeks services to develop a Program of Requirements (POR) for BEP in order to proceed with acquisition of real property for relocating BEP's manufacturing facilities and associated administrative functions to a new location within the National Capital Region, similar to BEP's Western Currency Facility in Fort Worth, Texas. In addition, GSA and BEP require the POR to include the detailed requirements necessary to re-purpose the Main Administrative Building on 14th Street for Department of Treasury and procure design and construction services for the new BEP headquarters and manufacturing facilities in its new location.

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DEFINITIONS

All-in Utilization Rate (All-In UR): The All-In UR is calculated by taking the total usable square footage of the project footprint, including total square footage of special space, and dividing the resulting number by the total headcount.

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE): National Organization that focuses on building systems, energy efficiency, indoor air quality, refrigeration and sustainability technologies, and publishes a set of standards and guidelines relating to HVAC systems and guidelines that are often referenced in building codes and used by consulting engineers, mechanical contractors, architects, and government agencies. These standards are periodically reviewed, revised and republished.

Building Floor Plate: The area on one whole floor of a building.

Category 1 Vault: Category I includes assets that are ready for transport to the Federal Reserve banks or are recognized as fully negotiable. This category includes current production series finished currency, finished new currency designs and historical products. Areas containing Category I securities will, at a minimum, be protected by Intrusion Detection System(s) (IDS), Closed Circuit Television (CCTV), Access Control Systems (ACS), Electronic Two-Person Unlock (ETPU) and the Two-Person Rule (TPR). Walls are to be 8" reinforced concrete, concrete block or gyp.bd/studs with sheet metal/plywood liners. Door includes a secured door system and daygate.

Category 2 Vault: Category II includes unfinished securities, finished instruments of reproduction items and designated special products that could be used for monetary gain,

converted or used for any form of economic benefit (i.e., numismatic value). Category II areas will be protected by IDS, CCTV, ACS, and ETPU. Construction requirements are similar to Category I.

Category 3 Vault: Category III includes distinctive and sensitive raw manufacturing materials used in the production of securities, having distinctive features that warrant physical protection in a securities storage area, but to a lesser degree than that afforded to Category I and II securities and instruments of reproduction. Walls constructed from structural floor to structural ceiling and hardened by the use of security mesh screening and/or covered by standard dry wall materials, or equivalent. Metal solid-core doors.

CCTV (Closed Circuit Television): Also known as video surveillance, is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors.

Circulation: Area comprises two types, primary, and secondary. Primary is the main route connecting the building core and common spaces such as elevators, exit stairs, mechanical rooms and core toilets. Secondary circulation is the aisle between staff areas and support spaces. Based on the ratio of enclosed spaces to open spaces, a Circulation Multiplier is estimated and applied to the total Net Area to determine the Circulation Area.

CIS: The Currency Inspection System (CIS) performs quality inspections. This inspection system utilizes computers, cameras, and software to examine and quality check bank notes.

COPE: Currency Overprinting and Packaging Equipment that utilizes the letterpressing process.

Culture: How the organization identifies as a

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OVERVIEW

group: beliefs, traditions, values, and icons.
Demographics: The mix of people in the workplace; the focus on experience levels; perceptions of what workplace should be based on expectations.

Desk Sharing: Desk sharing is an arrangement where two or more employees share one individual workstation. This process coordinates with telework or work schedules so only one employee is utilizing the workspace on any given day.

Frequent Interactions: Divisions should be near each other with easy access, but co-location is not as vital as the primary adjacency. Phone and Video Teleconference capabilities should be robust to allow for seamless communication.

Hoteling: Workspace is provided to employees on an as-needed basis as opposed to having individually assigned desks to each employee. Hoteling involves a reservation system with check-in and check-out ability. The process also involves the ability to retain the same office phone number that can be transferred from workspace to workspace.

Intaglio Printing: This term refers to the technique in which an image is incised into a surface and the incised line or sunken area holds ink.

Internet Protocol (IP): A set of rules governing the format of data sent over the Internet or other network.

LEPE: Large Examining Printing Equipment where the output is a packaged product ready for delivery to the Federal Reserve System.

Letterpress Machine: This term refers to the technique of relief printing in which an inked raised surface directly repeats an

impression against sheets or a continuous roll.

Manufacturing Areas: Operations and dedicated places within BEP's facility that contain the equipment needed to produce currency.

Manufacturing Support: Specialty spaces supporting currency manufacturing activities and functions.

Mobility: Ability to work away from the primary work site and function as if in the primary work site.

Mutilated Currency: Currency which has been damaged to the extent that its value is questionable and must be examined by trained experts before any redemption is made.

Net Square Footage (NSF): Actual spatial footprint allocated for a specific function. These are illustrated using prototype workplace illustrations.

Note: A single unit of paper currency in one of the manufactured denominations, ie. \$1, \$2, \$5, \$10, \$20, \$50, \$100.

Objectives: Goals as they relate to the workplace. They may be affected by policy, mission, operations, IT, security, and other factors.

Offset Printing: This term refers to the technique in which an inked image is transferred from a plate onto a rubber blanket and then onto a printing surface.

Organizational Structure: How the operations are organized formally and informally.

Primary Adjacencies: Divisions or branches that should be physically located next to each other.

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Process: How the work is accomplished in each organization.

Prototypical (“Typicals”): Standard square footage and layout for a room or space to be used.

Single Note Inspection (SNI): The SNI process uses high-speed equipment to inspect sheets for defects and reclaim individual notes that meet new note quality standards.

Standard Direct Expansion (DX)

Cooling Air Conditioning System: Air used for cooling space is directly chilled by the refrigerant in the cooling coil of the air handling unit. Since the air is cooled directly by the refrigerant the cooling efficiency of the DX plants is higher. However, it is not always feasible to carry the refrigerant piping to the large distances hence, direct expansion or the DX type of central air conditioning system is usually used for cooling the small buildings or the rooms on the single floor.

Strategies: An integrated approach using policy, process, and workplace to meet operational objectives.

Supervisory Control And Data

Acquisition (SCADA): A control system architecture that uses computers, networked data communications and graphical user interfaces for high-level process supervisory management, but uses other peripheral devices such as programmable logic controllers and discrete PID controllers to interface to the process plant or machinery.

Support Space: Functions that are not categorized as individual workspace. These include file rooms, copy/print rooms, conference spaces, and break-out areas.

Telework: This term refers to the act of working from a site other than the primary office location, such as from home or an alternate duty station.

Unmanned Aerial Vehicle (UAV):

Commonly known as a drone, unmanned aircraft (or aerial) vehicle, is an aircraft that can navigate without a human pilot on board.

Usable Square Footage (USF): The total USF is calculated by subtracting the square footage from permanent core features (elevators, exit stairs, mechanical rooms, toilets) from the total building floor plate square footage. When a floor includes multiple tenants, common corridors are excluded.

Utilization Rates (UR): The occupancy density used for a workplace; measured in square feet per person. The measurement is derived from the overall square footage, divided by the total number of assigned occupants. This calculation includes the offices, workstations, circulation space, and support spaces (conference rooms, copy rooms, etc).

Work-In-Progress (WIP): Products in various stages of the manufacturing process. WIP areas are used to store printed products while the ink dries or until the product is moved to the next manufacturing process.

Workplace: All areas that comprise the spaces used to complete the organization’s mission.

Work-style Mapping: How work is accomplished and the approach to tasks.

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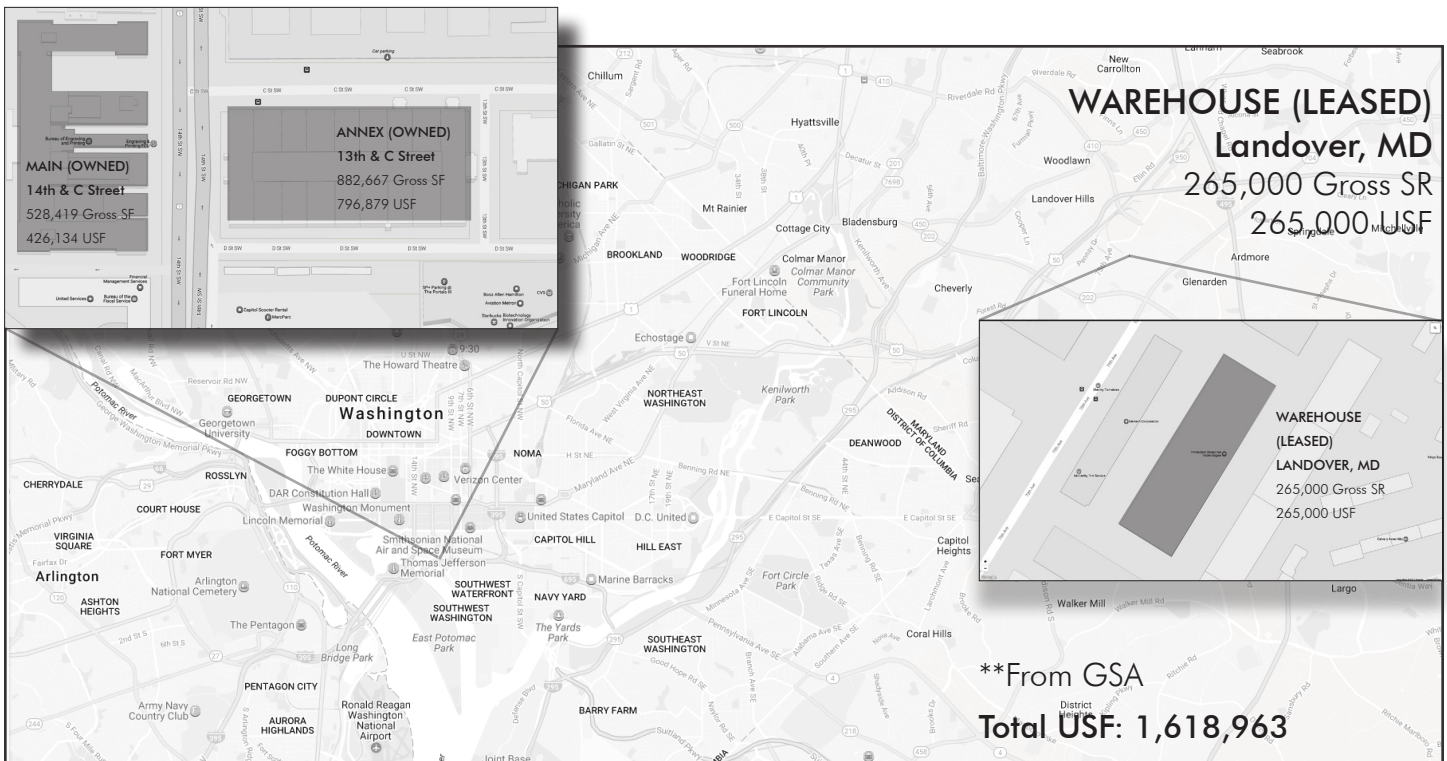
METHODOLOGY

PROJECT OBJECTIVES: As defined in the GSA Statement of Work.

The following project goals guide development of recommend solutions for BEP’s new facility:

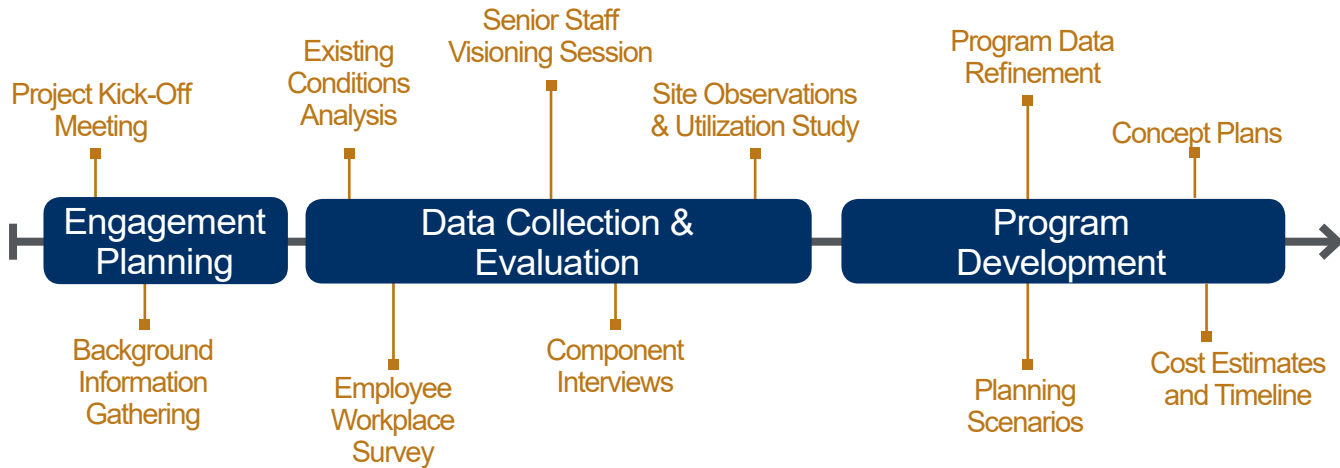
- Develop requirements for a modern, efficient currency manufacturing facility.
- Uncover existing and desired ways of working, as well as the cultural, spatial and organizational/factors that can promote and facilitate change.
- Embody sustainable design objectives that promote healthy, flexible, and productive workplaces.
- Enhance user satisfaction, sustainability through effective use of space, reduce reconfiguration costs, minimize waste, support facility reuse.
- Help to attract or retain BEP staff.

The map below locates BEP’s owned and leased assets in Maryland and Washington DC.





ENGAGEMENT STRATEGY TIMELINE



Employee Survey

Employees at BEP were asked to complete a workplace survey to collect information on their current workspace and needs. The survey categories included individual work styles, communication patterns, quality of support spaces, current workspace performance, and additional comments.

Workplace Walk-through

Throughout the on-site engagements conducted during the summer and fall of 2016, the project team conducted tours of the Main and Annex Buildings as well as the Fort Worth facility to view and document the existing features of each organization’s workspace and the manufacturing process.

Office, Division, and Senior Staff Questionnaires and Interviews

Designated representatives completed questionnaires detailing issues and requirements for their respective Offices and Divisions. Interviews were then held with Office, Division, and Senior Staff to further understand the responses and tour the existing office spaces. The purpose of these sessions was to gather information on the requirements for each component. The project team inquired about: function, work modes, storage and document use, adjacencies, meeting and support space needs, and expectations of each office.

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PROGRAM OF REQUIREMENTS

3.1 METHODOLOGY

3.2 SPACE REQUIREMENTS

METHODOLOGY

The IA research effort used several tools:

- Staff questionnaire deployed to all staff
- Senior Staff interviews
- Site tours and assessment surveys
- Site observations
- Office and Division questionnaire

The staff questionnaire was deployed and open for response from September 19, 2016 to October 11, 2016. It focused on individual work styles, collaboration activities, current workplace effectiveness, and future needs. The results are used throughout the report.

The IA team conducted senior staff interviews from July 2016 to October 2016 to collect their future workplace vision and project requirements. Other interviews were conducted with specialty groups responsible for manufacturing, information systems management, security, and facility management.

The Senior Staff interviews followed a series of questions based on organizational architecture. The responses formulated an overall workplace strategy and solution based on organizational structure, current work process, functions, and demographics. The interviews were designed to collect workplace requirements and assess alignment of both Senior Staff and employees' project objectives. The degree of alignment provides a guide for developing the change management effort needed to bridge the gap between current and future workplace.

PROGRAM OF REQUIREMENTS RENOVATED + NEW FACILITY

SPACE REQUIREMENTS

Index	GROUP	RENOVATED MAIN				
		TOTAL HC	TOTAL OFFICE/ WORKSTATION/ IN SPECIAL W/ CIRCULATION	MEETING AND SUPPORTW/ CIRCULATION	UNIT SPECIAL SPACE W/ CIRCULATION	TOTAL RENOVATED MAIN
1	EXECUTIVE SUITE	0	0	0	0	0
2	DIRECTOR	5	1,187	2,908	0	4,095
3	OFFICE OF CHIEF COUNSEL	14	2,050	1,008	672	3,730
4	OFFICE OF EXTERNAL RELATIONS	78	7,694	2,167	39,570	49,431
5	OFFICE OF STRATEGIC & PROJECT MANAGEMENT	13	1,322	588	0	1,910
6	OFFICE OF ENGRAVING	0	0	0	0	0
7	FEDERAL RESERVE	0	0	0	0	0
8	OFFICE OF CURRENCY MANUFACTURING	0	0	0	0	0
9	MANUFACTURING SUPPORT	0	0	0	9,800	9,800
10	OFFICE OF PRODUCTION ENGINEERING	0	0	0	0	0
11	OTD-MATERIALS AND APPLICATIONS DIVISION	0	0	0	0	0
12	OTD-SECURITY FEATURES DIVISION	0	0	0	0	0
13	OTD-TECHNOLOGY INTEGRATOR DIVISION	0	0	0	0	0
14	OPD-BEM SUPPORT DIVISION	0	0	0	0	0
15	OPD-MATERIALS TECHNOLOGY CONTRACTS DIVISION	0	0	0	0	0
16	OPD-PRODUCT MANAGEMENT DIVISION	0	0	0	0	0
17	OPD-PRODUCT DESIGN DIVISION	0	0	0	0	0
18	OFFICE OF PROCESS MANAGEMENT	0	0	0	0	0
19	OFFICE OF FINANCIAL MANAGEMENT	50	5,499	868	560	6,927
20	MUTILATED CURRENCY	0	0	0	0	0
21	OFFICE OF COMPLIANCE	0	0	0	0	0
22	OFFICE OF ACQUISITION	51	5,275	868	672	6,815
23	OFFICE OF FACILITIES SUPPORT	20	1,792	767	42,622	45,181
24	OFFICE OF EQUAL OPPORTUNITY AND DIVERSITY MANAGEMENT	5	605	1,428	0	2,033
25	OFFICE OF ENVIRONMENT, HEALTH & SAFETY	0	0	90	0	90
26	OFFICE OF HUMAN RESOURCES	37	3,942	5,404	0	9,346
27	SECURITY ADMINISTRATION	0	0	0	0	0
28	POLICE OPERATIONS	38	896	347	6,860	8,103
29	SECURITY INVESTIGATIONS	0	0	0	0	0
30	PERSONNEL SECURITY	18	2,005	1,456	1,025	4,486
31	OFFICE OF CRITICAL INFRASTRUCTURE & IT SECURITY	34	3,259	1,764	2,156	7,179
32	OFFICE OF IT OPERATIONS	11	986	515	5,656	7,157
33	OFFICE OF ENTERPRISE SOLUTIONS	59	5,286	179	168	5,634
34	QUALITY ENGINEERING AND MANAGEMENT	0	0	0	0	0
35	QUALITY OPERATIONS	0	0	0	0	0
	TOTAL COMPONENT NSF	433	41,798	20,357	109,760	171,916
	NET SF TOTAL GROSSING FACTOR (10%)					

PROGRAM OF REQUIREMENTS RENOVATED + NEW FACILITY

SPACE REQUIREMENTS

Index	GROUP	NEW FACILITY					BOTH FACILITIES
		TOTAL HC	TOTAL OFFICE/ WORKSTATION/ IN SPECIAL W/ CIRCULATION	MEETNG AND SUPPORT	UNIT SPECIAL SPACE W/ CIRCULATION	TOTAL NEW FACILITY	TOTAL REQUIREMENT
1	EXECUTIVE SUITE	24	5,096	1,904	0	7,000	7,000
2	DIRECTOR	0	0	0	0	0	4,095
3	OFFICE OF CHIEF COUNSEL	0	0	0	0	0	3,730
4	OFFICE OF EXTERNAL RELATIONS	0	0	0	17,500	17,500	66,931
5	OFFICE OF STRATEGIC & PROJECT MANAGEMENT	0	0	0	0	0	1,910
6	OFFICE OF ENGRAVING	58	5,914	448	38,416	44,778	44,778
7	FEDERAL RESERVE	0	0	0	102,200	102,200	102,200
8	OFFICE OF CURRENCY MANUFACTURING	400	8,366	1,859	221,275	231,501	231,501
9	MANUFACTURING SUPPORT	36	1,277	252	208,670	210,199	219,999
10	OFFICE OF PRODUCTION ENGINEERING	35	3,450	504	3,220	7,174	7,174
11	OTD-MATERIALS AND APPLICATIONS DIVISION	12	1,310	252	4,060	5,622	5,622
12	OTD-SECURITY FEATURES DIVISION	26	3,270	1,204	4,228	8,702	8,702
13	OTD-TECHNOLOGY INTEGRATON DIVISION	8	795	252	700	1,747	1,747
14	OPD-BEM SUPPORT DIVISION	6	616	756	1,316	2,688	2,688
15	OPD-MATERIALS TECHNOLOGY CONTRACTS DIVISION	9	963	588	2,240	3,791	3,791
16	OPD-PRODUCT MANAGEMENT DIVISION	10	706	168	504	1,378	1,378
17	OPD-PRODUCT DESIGN DIVISION	6	1,008	252	560	1,820	1,820
18	OFFICE OF PROCESS MANAGEMENT	17	1,758	336	21,000	23,094	23,094
19	OFFICE OF FINANCIAL MANAGEMENT	0	0	0	0	0	6,927
20	MUTILATED CURRENCY	25	2,554	336	3,808	6,698	6,698
21	OFFICE OF COMPLIANCE	46	5,219	448	168	5,835	5,835
22	OFFICE OF ACQUISITION	0	0	0	0	0	6,815
23	OFFICE OF FACILITIES SUPPORT	61	6,328	1,714	115,920	123,962	169,142
24	OFFICE OF EQUAL OPPORTUNITY AND DIVERSITY MANAGEMENT	0	0	336	0	336	2,369
25	OFFICE OF ENVIRONMENT, HEALTH & SAFETY	47	2,710	924	39,480	43,114	43,204
26	OFFICE OF HUMAN RESOURCES	0	0	7,560	3,000	10,560	19,906
27	SECURITY ADMINISTRATION	9	1,042	336	2,548	3,926	3,926
28	POLICE OPERATIONS	105	1,848	2,262	22,918	27,028	35,132
29	SECURITY INVESTIGATIONS	26	2,878	448	15,680	19,006	19,006
30	PERSONNEL SECURITY	0	0	0	0	0	4,486
31	OFFICE OF CRITICAL INFRASTRUCTURE & IT SECURITY	11	1,086	347	0	1,434	8,613
32	OFFICE OF IT OPERATIONS	38	3,640	840	14,364	18,844	26,001
33	OFFICE OF ENTERPRISE SOLUTIONS	82	7,582	336	588	8,506	14,140
34	QUALITY ENGINEERING AND MANAGEMENT	26	2,643	868	1,610	5,121	5,121
35	QUALITY OPERATIONS	33	3,270	336	9,870	13,476	13,476
	TOTAL COMPONENT NSF	1,156	75,331	25,866	855,843	957,041	1,128,957
	NET SF TOTAL GROSSING FACTOR (10%)		82,864	28,453	941,428	1,052,745	1,224,661