



“In the beginning...”

1994 marks the Centennial of the formation of the first direct predecessor of APWA. For 100 years, public works professionals have had a place to join together to improve their skills, share information and work together to find the most cost-effective ways of serving their community. APWA is entering this year at a critical crossroads in its history. New programs, approaches and concepts are now being developed to allow the organization to effectively serve the members in the next century. It is with our eye on the future that we take this look back in time to the beginnings of APWA.

APWA's predecessor was formed in the 1890s, a period in North American history of unprecedented urban growth. In this era, industrial production and the population of cities grew to an enormous degree, and with them grew the problems of congestion, pollution, water supply and energy. On a purely technical level, engineers confronted the enormous challenges of providing for the sanitary disposal of human and animal wastes, safe and reliable sources of water, light and power, streets that were clean and passable in wet weather — all on an unprecedented scale.

On a social and political level, the problems seemed no less intractable. Democratic government itself seemed in danger to the older, more established elites. Beginning in the 1880s, vast numbers of recent immigrants crowded into the cities, often in areas that were unsanitary, crime-ridden and poor. The contemporary view of cities as immoral places that were dirty and dangerous was given emphasis by local municipal governments that were often administered by corrupt political “machines” which translated the opportunities for city contracts and jobs into political patronage. Technical positions were often filled by persons whose main qualification was their political support, rather than their professional competence. There was little continuity in municipal service beyond the term of the elected official.

This was the context in which the American Society for Municipal Improvements (ASMI) was created. Its founders were people who shared a broad vision of what cities could be. They were committed to large-scale, planned, engineered, capital-intensive, long-term solutions to municipal problems. They believed in the gospel of scientific manage-

ment, the notion that objective, rational methods can introduce significant gains in the efficiency of service provision. They also believed that the engineer, relying on scientific methods, would arrive at objective, rational and non-political solutions. This argument sustained their notion that trained engineering professionals, using objective methods and standards, ought to be in the key technical decision-making positions in local government.

The creation of ASMI, the first organization for municipal public works officials, was the direct counterpart to the establishment of other “Progressive Era” programs, such as the Good City Government and the Good Roads groups. The specific impetus behind the formation of ASMI was the impact of the “White City” at the Chicago World's Columbian Exposition of 1893. Over 27 million visitors to Chicago saw a vision of what the city of the next century could be. This vision was strong and positive, a solution to the ills of modern urban life, countering the stream of anxiety which surrounded the exploding industrial cities of the late 19th century.

Led by such luminaries as Frederick Law Olmsted and Daniel Burnham, hydraulic engineers and landscape architects, along with some 40,000 workers, converted a swamp into a Venetian-style city of lagoons and fountains, complete with an artificial wooded island. Where nothing had been built before, there was now water supply, sewers, sanitation facilities, paved streets and electric lights for a city of 400,000!

The “White City” had the most modern public works infrastructure of any city in the world in 1893. As William White has written, “... (It) was a sanitary wonder. The paving, nightly sweeping and cleaning, many water closets, filtered drinking water and sewage treatment at the Exposition were the apotheosis of 19th century urban sanitary engineering.”



Spreading hot asphalt, ca. 1890s.

The millions of visitors to the Fair experienced a city as populous as any they knew. But this “White City” was the first not fouled by the odor of human and animal excrement, not dirty because of accumulated solid wastes and litter, and not dangerous because of the threats of crime and disease. The streets of this new city were wide and paved, cleaned by mechanical sweepers and illuminated by electric lights. Along with the magnificent architecture of

the buildings and the incredibly effective use of water and landscaping, the Fair conveyed a vision of the city of the future as a safe, clean, almost natural environment. It was the product of the best public works planning and engineering professionals could provide.

While the construction and maintenance of the fairgrounds constituted a *de facto* exhibit on the benefits of modern public works, several exhibits served to provide specific, practical information. Modern techniques of roadbuilding were continuously demonstrated at the Fair. The latest mechanical equipment was displayed, including road graders, ditchers, scrapers, rollers, flushers and sweepers.

The Chicago World's Fair of 1893 also included a World Congress on Engineering. At this Congress, 250 papers were presented by representatives of many fields and nations. It was the first gathering anywhere of engineers beginning to grapple with the challenges of public health, sanitation and urban development. The editors of the *Engineering News* described the International Engineering Congress in August, 1893 as being "doubtless the most important assemblage of engineers for the discussion of technical subjects which has ever met." As a direct result of the quality of the dialogue and the enthusiasm it generated, the *Engineering News* called for the creation of a national organization of municipal engineers and city officials. Its purpose, as envisioned by the editors, was "to promote special engineering knowledge and efficient practice in the field of civic improvements."

The response to this call was the first meeting of the American Society of Municipal Improvements, held on September 18, 1894 in Buffalo, New York. ASMI stated its purpose, "to diffuse and advance the best and most economic methods of managing municipal departments and constructing public works." ASMI established standing committees to set standards and support professional practices in public works. ASMI committees on street paving, sewerage and sanitation, disposition of garbage and street cleaning, waterworks and water supply, taxation and assessment, city government and legislation quickly became important sources of reliable technical information.

Membership quickly grew to include most of the major cities of North America. The annual meetings of ASMI included presentations on such topics as "Excavation in City Streets" (by the city engineer of Williamsport, Pennsylvania), "Testing Paving Bricks" (by the city engineer of Peoria, Illinois), "The Need of a Laboratory for the Testing of Asphalt and Asphalt Pavements" (by the engineer of street construction, Brooklyn, New York), "Quality of Public Water Supply" (by the city engineer of Cincinnati, Ohio), "Street Cleaning..." (by the street

commissioner, Toronto, Ontario), and "The Collection and Disposal of Garbage in Milwaukee" (by the commissioner of health, Milwaukee, Wisconsin).

M.J. Murphy, street commissioner for St. Louis, Missouri, was instrumental in helping organize the first meeting. Family illness prevented him from attending that first meeting, at which he was elected president nonetheless. He soon left the field, and within its first year, he effectively resigned from the organization he helped found. The first vice president, George Benzenberg, chairman of the board of public works and city engineer of Milwaukee, presided at the first meeting, and was elected president at the second meeting in Cincinnati, Ohio.

Benzenberg's presidential remarks in 1895 set forth the views of the founders of ASMI. He said:

Our society is on the threshold of a great and useful future. When it first met, one year ago, there were present only the representatives of thirteen cities, and it was very doubtful what its future would be. We are meeting today (one year later) with a representation of seventy cities and one-hundred and fifty delegates. They are the men whom the people have intrusted with the great public works in which every year more than one hundred million dollars is expended.

The object of our society is to promote their efficiency by gaining from the knowledge and experience of others, and by enlightening them that they may be able to avoid the dangers, risks and errors into which so many have fallen.... Instead of blundering along in the old way, at great cost to themselves, they (the cities) are sending their delegates here to learn what is best and newest and successful in public works, and they will build their future on the knowledge so obtained.

This means, in the first place, economy. Public works will be built in the most economical manner, and in the best manner for the health, comfort and enjoyment of the people. It is for this that we shall labor here.

In this way and for these reasons, the first direct predecessor to APWA was formed in 1894.

Editor's note: This is the first in a series of articles to run throughout the year on the history of the American Public Works Association, in celebration of its Centennial.



1894-1924: Building public works systems

Historical overview

Public works contributed to and reflected most of the important historical developments in these years. It was in this critical period that the modern city—supported by a large-scale, planned, professionally engineered network of public works systems—came into being. From 1894-1920, virtually all major cities in North America built extensive systems of sewers, paved streets, gas and electric utility lines. Water supplies were filtered and treated with a chlorine compound, and raw sewage was no longer dumped directly into the water supply. The risk of typhoid, cholera and other communicable diseases was dramatically reduced. At the center of these changes was the engineer, the technical expert who used scientific methods to rationally and efficiently bring order to the management of municipal public works programs.

Professional engineers became key players in the local public works agencies which were established in this era. ASMI, the American Society for Municipal Improvements (the first, direct predecessor of APWA), strongly supported the use of technically competent professionals, instead of political appointees. Through its standing committees and technical reports, ASMI worked to establish standards in pavements, sewerage, water quality, etc.

Transportation

The expanded use of asphalt dramatically increased the miles of paved streets and highways in this period. Although most people attribute this trend to the automobile, equal, if not greater importance should be placed on the bicycle and the truck. The bicycle craze of the 1890s involved large numbers of people in an effort to influence the building of paved roads. The need for farmers to "get out of the mud," to get from farm to market, was also a great force in this period. The early use of trucks placed great stress on the road system. Formation of the first state highway departments date from this era, as does the creation of the Highway Research Committee. The largest cities built mass transit systems of elevated lines, subways and interurbans.

Equipment

The transition from manual labor to mechanized equipment during the early decades of the twentieth century was one of the most significant developments in public works technology. As a result, public works operations could be conducted with greater safety, efficiency, and effectiveness. Horse-drawn equipment—particularly mechanical sweepers, flusher wagons, tank carts, rollers, scrapers, and steel-frame graders—became integral to public works operations during this period. The steam engine also played a role, primarily in heavy construction.



Two-horsepower snow plow, ca. 1890s.

PHOTO COURTESY OF CITY OF NEW YORK, DEPARTMENT OF SANITATION.

Although gasoline-powered tractors and trucks had been used in place of horses as early as 1910, it wasn't until after the First World War that motorized equipment began to replace older technology. Through the 1920s and 1930s internal combustion engines began to transform the character of public works equipment. Along with motorization came related developments such as hydraulics, pneumatic tires, and improved suspensions. Horse-drawn equipment, however, was still used, even as late as the 1930s.

Solid Waste

In 1895, George E. Waring was appointed commissioner for New York City's Department of Streets. During his administration the modern practice of municipal solid waste collection and disposal was begun. The City began a program of classifying, separating, and recycling refuse. Waring directed construction of the first rubbish sorting plant in the United States where ammonia, glue, and grease were extracted from organic wastes and sold for fertilizer. He also initiated a land reclamation program using wastes from landfill. To professionalize the street cleaning department and improve the image (and morale) of his street cleaning crews, Waring hired more sweepers, provided them with white uniforms, increased their pay, and improved their working conditions. The reforms he instituted signalled a change, not only in solid waste collection, but in the administration of public works services.

Water resources

Public works engineers were instrumental in this period in providing more extensive and healthful water resources. The major population centers needed to acquire expanded water supply, often from sources hundreds of miles away. Dams, reservoirs and aqueducts

were built by San Francisco, Los Angeles, Winnipeg and Boston. These projects often involved significant controversy over water rights. City water, drawn from local bodies of water, was often contaminated with sewage resulting in major typhoid fever epidemics in the 1880s and early 1890s. The main response to the public health crisis was to introduce sewerage and wastewater treatment, as well as to dilute and divert effluent away from the water supply. The most notable example of the latter course was the Chicago Sanitary & Ship Canal (1900), built by the Metropolitan Sanitary District to reverse the flow of the Chicago River away from Lake Michigan, towards the Mississippi. This plan was based on an analysis by Rudolph Hering, one of the founders of sanitary engineering, along with George Warren Fuller, Thomas Sedgwick, Alan Hazen, Hiram Mills and others. Several of these engineers were together at the Lawrence Experiment Station in Massachusetts, which established the technical basis for water purification and wastewater treatment. Chlorination of water supply was introduced in 1910, and its applicability enhanced through the work of Dr. Abel Wolman. Imhoff tanks for treatment were introduced in Atlanta in 1912. The rational method of calculating storm water runoff was developed in this period. Combined sewer systems were built in many of the large cities of the Northeast and Middle West. The first separate sewer system was built in Memphis, Tennessee, in this period under the direction of George Waring.

Administration/organization

In 1894, representatives from business, government, and the professions gathered in Philadelphia for the first annual Conference for Good City Government. Their goal was to address the problems of government corruption and mismanagement. As a result of this meeting, the National Municipal League was formed the following year. To implement reform, the League proposed significant structural changes in city government, including the creation of a council-manager system. ASMI supported the notion of keeping technical staff in place beyond the results of any given election.

Since the solution to many urban problems involved engineering, cities began to employ municipal engineers in the newly-created positions of city manager. In smaller communities, with limited funds, the engineer-manager could supervise the various municipal services; in larger communities, engineers could become public works administrators for specific departments. They were asked to improve the efficiency and effectiveness of their departments through better engineering techniques and improved administrative methods and organization. To

effect these changes, however, it was necessary to develop comprehensive, long-range plans. Among the most influential figures in the development of urban planning during this period was a municipal engineer for the City of Newark, New Jersey, Harland Bartholomew. In 1915, Bartholomew developed a comprehensive city plan for Newark and became the first full-time municipally employed city planner in America.

The early years of city planning, reflected in the City Beautiful Movement, had focused on design and esthetics and the creation of parks, boulevards, and civic centers. But planners such as Bartholomew sought to create cities that were not only more livable, but more efficient with improved housing, transportation, sanitation, and other public works systems and services. Bartholomew summarized this philosophy in an article he wrote years later: "The modern city plan is not only concerned with improving the city's appearance, which was the primary purpose of the earlier plans, but is equally concerned with improving efficiency and, coincidentally, with developing a more orderly, healthful, and desirable place in which to live."

Editor's note: This is the second in a series of articles to run throughout the year on the history of public works in commemoration of the centennial of the profession.

Centennial Calendar Available

Copies of the APWA Centennial Calendar inserted into the December 1993/January 1994 issue of the *APWA Reporter* are available for purchase. This unique calendar offers powerful photographic images of public works as a human activity, an example of which accompanies the historical article on these pages. Proceeds from the sale of this special publication will be used in support of student scholarships.

To order a copy of the calendar please send \$10.00, plus \$1.50 shipping and handling, to APWA Calendar, American Public Works Association, 106 W. 11th Street, Suite 1800, Kansas City, MO 64105-1806.

Discounts on multiple copies of the calendar are available. For further information on the calendar, contact APWA at (816) 472-6100.

Corrections

- The APWA Centennial Calendar incorrectly listed Milwaukee as the site for the 1994 One-Call Symposium. The correct location should be Minneapolis.
- The *Sustaining Member Directory* incorrectly listed the phone number for Computerized Fleet Analysis Inc. The correct contact number for sales and information is (800) 437-6001. The company sells fleet management software.



1924-1935: The transition years

During the first decades of the twentieth century, population was less concentrated in urban areas, and technology was less sophisticated. Not only were citizens less active in community decision making, but they were also less demanding of public works operations. Thus, public works officials generally learned "on the job" by trial and error. Their decisions were based on the primary elements of utility, economy, and convenience. And they customarily valued technical competence over managerial ability.

Proficiency by engineers in a technical capacity was not, however, always a good indicator of their suitability for administrative duties. Clarence E. Ridley graphically demonstrated in his 1929 study of the organization of public works departments, *The Public Works Department in American Cities*, that, although engineering knowledge was vitally necessary for public works administrators in small departments, it was only a part of the qualifications required of public works directors in large departments. But prior to World War II, opportunities for obtaining formal training in public works administration were limited.

By 1925 some 230 surveys of public service problems had been made. In case after case, these surveys proved helpful to public works administrators. Not only did the survey use hard facts to describe how government agencies should function, but they outlined the advantages and disadvantages of specific administrative policies, arrangements, and procedures. The principles and requisites of responsible and effective government were thereby delineated. As a consequence, the New York Bureau of Municipal Research became the advocate of such measures as the executive budget, the consolidation of overlapping agencies, and the elimination of administrative boards.

Transportation

The decisive role of public transportation in shaping American cities was ended by the automobile shortly after World War I. In 1926 transit ridership peaked at 17 billion passengers and entered a steady decline which was continued virtually unabated for fifty years. Automobile ownership leaped from 9.2 million in 1929 to 105 million in 1970 and authored dramatic changes in the size and composition of large cities.

By 1929 the states had improved about 80,000 miles of roadways on the federal aid system and an additional 57,000 miles on the state systems, financed wholly by state funds. During that period, motor vehicles had increased to nearly 27 million, two and a half times the number in 1921, and road user taxes had increased six times to over \$763 million per year. The portion of the highway costs carried by road users had risen to 96 percent.

The number of horses and mules in the nation peaked at 26 million in 1918, and by 1929 the number was decreasing

rapidly. Stage construction of roads was the best solution for the transition from horse-drawn to all motor vehicles, although few, if any, foresaw the great increase in motor traffic which actually did occur.

As road use increased, one of the big difficulties was to determine the number and kinds of traffic that should be provided for in the design of streets and highways and the overall highway and street system that should be developed. Good data on which to base these designs were generally not available, although some information had been assembled.

The need for more accurate information resulted in the 1934 Federal Aid Highway Act. In 1934 and 1935, Herbert S. Fairbank, the Bureau of Public Roads' deputy commissioner for research, began "planning for planning." Fairbank was indeed the father of highway planning. He sketched out the data collection and analytical processes, and he wrote and spoke strongly on the necessity of planning and its use in policy, administrative, and engineering decisions. Early work undertaken for collection and analysis of data to be used in planning included highway surveys of three broad types—road inventory, traffic, and financial and road use.

Street cleaning

As the horse was gradually replaced by the automobile and the truck, one source of street pollution disappeared. But a demand for frequent street cleaning arose as more motorized vehicles, traveling at increased speeds, appeared on the streets and their tires picked up quiescent dust and litter. During the 1920s and 1930, municipalities of all sizes purchased mechanical sweepers to satisfy this demand. They began using them to clean the business districts several times each week, but many swept residential areas only sporadically or not at all.

Sweeper technology improved slowly during this period. Gutter brooms were added and engines became more powerful, but payloads remained rather low. A vacuum sweeper was introduced in the 1920s to pick up the dust missed by mechanical sweepers, but few cities adopted it.

Snow removal operations developed in many cities during the 1920s. As the number of automobiles and trucks increased and as emergency, waste removal, and commercial delivery services became motorized, provisions were made to insure that vehicles could function and that services could continue throughout the entire year regardless of the amount of snow that fell or ice that formed. Thus, most cities located in the snow belt learned quickly to adapt their regular street cleaning and refuse collection equipment and practices to snow removal.

Wastewater treatment

In 1928, the Water Pollution Control Federation (WPCF) was founded as the Federation of Sewage Works Associations. The WPCF was formed out of the individual state

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organizations, the oldest of which was established in New Jersey in 1915. The American Society of Civil Engineers founded a Sanitary Engineering (now Environmental Engineering) Division in 1922. The journals of these and other societies, such as APWA and the American Public Health Association, serve as valuable exchange media for information on operations and research.

During the interwar years, studies of streams and stream pollution continued to develop important information. Public awareness of the danger of water pollution, particularly its relation to public health problems, stimulated the construction of numerous waste treatment facilities in the 1920s.

The advent of the Depression, however, brought about a sharp decline in the number of treatment plants constructed with state and local financing. As the Depression affected state and local governments, progress slowed in the field of water pollution control. To revitalize the economy and provide jobs to the unemployed, the federal government established agencies such as the Civil Works Administration, the Public Works Administration, and the Works Progress Administration.

The profession

By the end of the 1920s, fewer engineers became managers of large cities, since city councils increasingly sought persons trained in public administration for such positions. Engineers in the public sector who displayed executive ability but who did not become city managers often became public works administrators. They directed those departments engaged in public works activities whose titles varied depending upon the scope of functions for which they were responsible. In his 1929 study, Ridley reported that, for the most part, these activities included street design, improvement, and maintenance; street cleaning; sidewalks; street lighting; excavation permits; street name signs; house numbering; bridge design, construction, and maintenance; sewage disposal; water works; refuse collection and disposal; maintenance of all city-owned equipment; inspection of the construction of public improvements; operation and supervision of utilities; and care of public buildings and grounds. In a highly urbanized society, most of these activities were indispensable to community life.

The ASML, which changed its name to the American Society of Municipal Engineers (AME) in 1930, continued to place major emphasis on technical problems of design and construction. It hired a part-time secretary who also



Boulder Canyon Project, Nevada, 1933.

PHOTO COURTESY BUREAU OF RECLAMATION

served the Engineers' Club of St. Louis in a similar capacity. Most of AME's members were design and supervising engineers. Thus, its standard specifications, special reports, annual proceedings, and committee findings served as reference material for nearly 800 members by 1935.

In 1919 another organization, the International Association of Street and Sanitation Officials, whose name was changed in 1925 to the International Association of Public Works Officials (IAPWO), was established to advance both the knowledge and practices related to the

operation, maintenance, and management of public works facilities. The IAPWO stepped up its activities in 1931 when it created a committee to cooperate with the International City Managers Association to design a national cost accounting and reporting system to facilitate the planning, programming, and budgeting of public works operations. Demonstration installations in Brunswick, Georgia; Kenosha, Wisconsin; Troy, New York; Flint, Michigan; and Cincinnati, Ohio resulted in the development of a comprehensive management system. The demonstration manuals and a textbook entitled *Municipal Public Works Management*, outgrowths of this collaborative effort, were not only widely used but sparked other initiatives and programs which played an important role in improving public works administration in the United States.

By the mid 1930s, it became increasingly evident to public works engineers and administrators that the design, construction, operation, maintenance, and management of public works were inseparable. And the contacts of AME and IAPWO with other non-profit public service organizations increased the desire of both associations to have a full-time executive director and a broad program of services. Therefore, in 1935 AME and IAPWO agreed to establish a joint secretariat and requested Donald C. Stone, who had supervised IAPWO's demonstration projects and was then serving as executive director of the Public Administration Service, to also act as its executive director. Since AME and IAPWO were lacking in funds during these Depression years, Stone consented to contribute his services on condition that the two organizations merge. In 1937 AME and IAPWO joined to form the American Public Works Association (APWA). ♦

Editor's Note: This article, excerpted from Public Works History in the United States: 1776-1976, is third in a series running throughout the year on the history of the American Public Works Association, in celebration of its centennial.

The Founding of APWA

By Howard Rosen
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1894

Celebrating the Past

In the 1930s, most municipal engineering departments were separate organizations from departments of streets, sewers and solid waste collection. There were relatively few Departments of Public Works which contained all the main functions under a single, comprehensive umbrella. There was also no single association whose programs served the practitioners in all these areas. Engineers and consultants tended to be members of the American Society of Municipal Engineers (ASME). This organization was the original American Society for Municipal Improvements (ASMI), which changed its name in 1930. It was headquartered in St. Louis, MO, in that city's Engineers Club. The secretary of that club was also the secretary of the association.

Those involved in public works administration and non-engineers involved in the delivery of public works services were attracted to the International Association of Public Works Officials (IAPWO), which was headquartered in Chicago, IL.

This organization, founded in 1919, was heavily dependent in its early years on the support of Elgin Sweeper Company and the City of Chicago, Department of Streets and Sanitation.

Partnering Is Key to Professionalization

Both ASME and IAPWO had observed the success of several professional associations in the field of municipal public administration as they had come to Chicago to join together in the Public Administration Clearinghouse (PACH). Under the guidance of Louis Brownlow, Charles Merriam, Guy Moffett, Clarence Ridley, Luther Gulick, and with the significant financial support of the Spelman Fund (established by the Rockefeller family), several of these fledgling associations agreed to locate their headquarters in Chicago. Through pooling their efforts and limited resources, several were able to acquire professional staff for the first time.

Professionalization of public administration was central to the effort to bring together in a single building the organizations that were most involved in municipal public administration. The professionalization of the administration of local government was a major goal of Merriam, Brownlow, Stone and others. They believed that it was the competency, knowledge and skill of public officials that was the key to restoring integrity and efficiency to government. They also believed that amateurs could not be expected to handle the increasingly intricate web of regulations and programs that had come into being in the 1930s.

ASME and IAPWO Move toward Union

The concept of creating a unified body of knowledge for the emerging field was embodied in the creation of a joint reference library. It was also reflected in the choice of putting the building on the campus of the University of Chicago. The expectation was that with a single building, providing all sorts of overhead capability, major opportunities for communication and cooperation among the various associations, located on campus, would also provide the opportunity for extensive interaction between these practitioners and academics.

Having a headquarters building on the campus of the University of Chicago, where Merriam was a noted professor of political science, was considered to help the advance

of professionalization of local public administration in two ways. First, it would give the staffs of the various organizations the opportunity to communicate with each other on a regular basis and to share overhead expenses. Second, it would offer access to the

rapidly expanding body of knowledge being developed by researchers at the university. The building was seen as a bridge between theory and practice in municipal public administration. For a variety of reasons, that bridge was never effectively built, apart from the direct and personal involvement of Merriam and a small handful of others.

Stone Cements the Bond

One of the most visible and dramatic successes of this coming together was the work of the Public Administration Service (PAS). Under the direction of Donald C. Stone, the PAS conducted numerous field surveys and analyses, implementing modern management and budgeting techniques in government agencies. The PAS soon became the consulting, research and publication arm of all the associations involved in the Public Administration Clearinghouse (PACH). Stone had come to Chicago originally as the Director of Research for the International City Management Association (ICMA).

In 1933, both ASME and IAPWO independently approached Stone, each asking him to assist them with developing funds for them to be able to afford a paid Executive Director and staff. Stone responded to their request, saying "that it would be very difficult to select one of them for funding, and two would be impossible, and despite distinctive interests, they needed to work together." Brownlow had suggested that a single, consolidated organization would appeal to the Spelman Fund. Both associations thus were encouraged to consider forming a single, consolidated organization.

They believed that it was the competency, knowledge and skill of public officials that was the key to restoring integrity and efficiency to government.



By 1934, ASME and IAPWO determined their willingness to work towards a merger. Under Stone's guidance, they set up a joint committee to plan for a joint secretariat. Stone worked out the details, including the drafting of APWA's constitution, work program and budget. Following approval by both Boards of Directors, Donald Stone served as a voluntary, part-time Executive Director of the Joint Secretariat. One of the first things Stone did was to introduce a new monthly publication, *Public Works Engineers' News Letter*.

The first issue of this newsletter was published in July, 1934. Its purpose was "to keep the membership informed throughout the year of what is...of general interest in the field of public works....It will not include technical articles...rather the newsletter will refer to such articles when they are of particular interest to the practical official." Still under the auspices of the ASME/IAPWO joint secretariat, Stone introduced the publication of the annual *Public Works Yearbook*. The yearbook included the proceedings of the annual Public Works Congress (which was also now a joint event), as well as information regarding membership and official actions of the Boards of Directors. Before the official formation of APWA, these three strategies, a monthly newsletter, an annual yearbook and an annual congress, provided the basis for the unification to follow.

Administratively, Stone had to establish effective mechanisms to track membership dues. He was dismayed to find that nearly half the members of ASME were actually delinquent, so that there was much less income to work with than he originally thought. One of the first tasks was simply to send dues notices. The organization had not been well-handled, and it was difficult to sort out who were actually members. Proper records, membership and accounting procedures had to be developed. Alice Cox, of the PAS staff, was employed to help implement these systems so that they were in place before the merger actually took place.

Early Funding Comes from Spelman Grants

With a grant from the Spelman Fund, a search was conducted for an Executive Director. The Joint Committee selected Frank Herring, an editor of the *Engineering News-Record* to serve as the first full-time, paid Executive Director. His term began on January 1, 1937, the date of the actual

formation of APWA. Before the merger, the annual meetings of ASME were dry and entirely technical in character. IAPWO's annual meeting, however, tended to be somewhat of a binge. Much of Herring's early efforts were directed at making the annual Congress both professionally and socially a success.

For the first decade, a great majority of APWA's income was provided by annual grants from the Spelman Fund (which had also funded construction of the new headquarters building at 1313 East 60th Street in Chicago, IL). In addition to a grant for staff salaries and general administration, APWA received a grant to conduct a research project to determine "Standards and Practices in Public Works." Richard Pinel, APWA's first research director, conducted this effort.

APWA Born into Favorable Social Climate

Having a single organization covering the public works field was especially valuable for the effective coordination and implementation of Depression-era public works programs. First, there was the Civil Works Administration (CWA), intended to provide jobs for people through the winter of 1933-34. This was followed by the Work Projects Administration (WPA) and the Public Works Administration (PWA). It was the latter that sponsored actual construction projects, such as bridges and dams.

Public administration professionals, such as Brownlow, Merriam, and others had been favoring the establishment of a single federal public works agency. With the introduction of Reorganization Plan No. 1 in 1937, the same year as the formation of APWA, it appeared as if this idea was to be realized.

The popularity of FDR (President Franklin Delano Roosevelt), and the importance of the New Deal public works programs, seemed to provide sufficient momentum to overcome the opposition of Congress and several key federal agencies to consolidation. But this plan was put on hold, and eventually sidetracked because it became involved legislatively with FDR's ill-fated plan to enlarge the Supreme Court. Perhaps, if there had been a single Federal department of public works established, the formation of APWA would most likely have taken on even greater historical significance.





Cutting through the great North American wilderness in 1942, iron men and machines from the U.S. Army Corps of Engineers did their part in the war effort by constructing the Alaskan/Canadian Military Highway.

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ew Deal public works programs grind to a halt as the war breaks out



CELEBRATING A CENTURY OF PUBLIC WORKS

1894-1994

Public Works In War And Peace (1940-1964)

Fifth in a series.

By Howard Rosen, Ph.D., Director
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The outbreak of World War II in Europe and Asia had a dramatic impact on the United States and Canada. Domestically, the war put a rapid end to the massive public works programs which had been developed to counter the negative aspects of the Depression. And it was the war, not these programs, that finally ended a decade of economic stagnation and decline.

But the New Deal public works programs built hundreds of thousands of miles of roads, tens of thousands of bridges, scores of dams and parks, many thousand schools, libraries, courthouses, hospitals, and sanitation facilities.

Public works construction and maintenance that was not considered a direct part of the war effort was put on hold for the duration. Roads that served military installations and industrial

production related to the war effort were built and widened. Many bridges which had to carry heavier loads (for tanks and other material) were strengthened. Many military training and port facilities were built, including the sanitation facilities they required. From his work with the Sanitation Services at the U. S. Army Corps of Engineers, Jean Vincenz developed the concept of the sanitary landfill. After the war, this technique was utilized widely.

Overseas, public works played a direct role in the war effort. Engineer units were responsible for clearing land, building airstrips, bridges, roads and bases of operation. Ed Cleary told the story of military public works construction in his book, *Bulldozers Come First!*

After the combat, knowledgeable public works officials were directly involved in the rebuilding effort. Donald C. Stone headed up a unit responsible for managing the public works administration of cities after liberation.

Apart from the war itself, the impact of World War II on public works is difficult to measure. Two aspects, however, stand out. First, the war diverted resources in a significant way into the military sector. This produced an enormous pent-up demand for domestic civilian goods and public works facilities. Manufacture of housing and cars was at a virtual standstill during the war. So too was the construction of new roads and highways, and the extensions of water and sewer systems.

Second, an entire generation of young public works engineers learned how to work in a military organization to get things done. What they learned about the approach to problem-solving, discipline, command and control hierarchies was transferred.

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By 1944, it became clear to many leaders in transportation and water resources that the end of the war was near. They shared a concern that the adjustment to a peacetime economy would result in another economic depression.

War's end leads to genesis of nation's interstate network

As a result, in anticipation of the need to prepare major new public works programs to be ready in time for the end of the war, the U.S. Congress issued landmark pieces of legislation in 1944: the Flood Control Act and the Federal Aid Highway Act of 1944. The latter was the first designation (as yet without funding) of a National System of Interstate Highways "so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities and industrial centers, to serve the national defense and connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico." The 1944 Highway Act authorized \$1.5 billion following the end of the war for use in urban areas, to connect them with the existing federal-aid system.

High speed, safe highways envisioned

The 1944 Act relied heavily on two reports prepared

by the Bureau of Public Roads, *Toll Roads and Free Roads* (1939), and *Interregional Highways* (1944). Together, these reports depicted a vision of highway transportation of the future, with a national system of 40,000 miles of controlled access, high speed, safe highways.

After much debate, the National System of Interstate and Defense Highways was, in fact, launched on June 29, 1956. To many it was the greatest public works project in history. While it was intended to provide a modern system of highways, in the long run the Interstate Highway System transformed the landscape, determined the shape of cities, helped promote the development of suburbs, and led to the creation of an interstate trucking industry, often referred to as a "warehouse on wheels."

Interstate controversy surfaces

The building of the Interstate was not without controversy. The confrontations over the location of closed-access highways in built-up metropolitan areas helped to generate the environmental movement in the 1960s at the community level. Buying up right of way where land costs were relatively cheap, or using the right of eminent domain, tended to put highways through poorer neighborhoods and parks. As a result of the ensuing "freeway revolt," by the end of the Interstate era, the decision-making process was no longer in the hands of engineers and a small number of business leaders.

Post-war era prompts new growth for APWA

A new generation of leadership in public works emerged from the war years. Figures such as Sam Baxter (Philadelphia), Roy Morse (Seattle), Milt Offner (Los Angeles), Ross Clark (Toronto), Jean Des-Baillets (Montreal), Dave Caplan (New York), and Ed Booth (Bismark), were among the many examples of public works leaders who would have a significant role in shaping their communities in the post-war era. They, along with Milt Rosen (St. Paul), Ed Cleary (editor of *Engineering News-Record*), Bill Foster (editor of *American City Magazine*), and others clearly saw the enormous potential for APWA in the second half of the 20th century.

APWA known for reference books

APWA became well known for its standard

reference books, *Solid Waste Collection Practice* and *Street Cleaning Practice*. Yet until the mid-1950s, APWA remained a fairly small, traditional organization. Much of its early operation was guided by Olga

Vydra, the Office Manager. She took care of membership, billing, correspondence, editing the *Public Works Engineer's Newsletter*, and managing the annual Congress. Much of the growth in membership corresponded with Bob Bugher joining the staff in 1953. He pursued a strategy of stimulating the development of local chapters to provide a framework for increasing membership. In five years, from 1953-58, 15 new Chapters were formed. In these years, membership more than doubled, from approximately 4,000 to nearly 9,000.

APWA focuses on research

In order to provide a mechanism for sharing the cost of research on practical public works topics, the APWA Research Foundation was formed in 1955, under the direction of Colonel William Hardenburgh. The Education Foundation was established in 1962. In 1964, the *APWA Reporter* began publication. In

1965 the first two Institutes for Professional Development were formed: the Institute for Solid Wastes and the Institute for Municipal Engineering. They would be followed by five other institutes and several councils. By the mid-1960s APWA had a thriving equipment show to go along with the technical program at the annual Congress. It was organizing and

promoting a full range of workshops and seminars. And it was developing an aggressive research and publications program. It was with this basic architecture in place that APWA would move beyond the 60s.

Pour le résumé en français, voir à la page 11



Ed Cleary (l.) and Sam Baxter in late 1950s.



CELEBRATING A CENTURY OF PUBLIC WORKS

1894-1994

APWA: Growth and Transition (1965-present)

Last in a series.

By Howard Rosen, Ph.D., Director
Public Works Historical Society

young members of the public works field were selected to receive fellowships to study and acquire the skills needed to become effective managers of public works programs. Those selected were full-time employees of a public works agency committed to undertaking one to two years of full-time graduate study. At Pitt, they were exposed to a rigorous, multi-disciplinary, case-study approach. Many of today's leaders in APWA are graduates of the Pitt Program.

APWA conducts scores of highly regarded research projects

From the mid-60s through the 70s, APWA conducted literally scores of research projects. Federal agencies, such as the U.S. EPA and the Federal Highway Administration, sponsored projects, as did local public agencies. APWA-published research reports on the swirl concentrator, snow and ice control and street and highway maintenance were regarded as significant contributions to the field.

Public works Congress expands

The International Public Works Congress & Equipment Show also expanded greatly during these years, with new records for attendance and exhibits being set every year. Marketing and promotion efforts were introduced, beginning in 1962 with the establishment of National Public Works Week and the Top Ten Public Works Leader of the Year program. In 1962, the *APWA Reporter* magazine replaced the *Public Works Engineers' Newsletter*, as well as the annual Congress proceedings.

Special interest groups form

Special interest groups within the field of public works were accommodated in this period through the development of the Institutes for Professional Development, as well as the introduction of specialty conferences such as the North American Snow Conference and the One-Call Symposium. Other special groups of note included the Council on Emergency Management, the Council on Equal Opportunity, the Public Works Historical Society and, more recently, Special Interest Groups (SIGs) such as MicroPAVER and Management Practices. APWA established a Washington office and a resolutions process was developed whereby APWA was able to take stands on key legislative and regulatory issues.

APWA emerges as major force in arena of public works education, research and networking.

In the last quarter of the American Public Works Association's century, the organization witnessed extensive growth, accomplishment, turmoil and transition. During this era, APWA was a strong leader in the field in many areas—education, research, and history, to name but a few.

APWA begins graduate program

To this day, arguably the most extensive and successful graduate program in public works administration is the program at the University of Pittsburgh's Graduate School of Public & International Affairs. The Pitt Program, as it came to be known, was the brainchild of Dr. Donald C. Stone, who helped arrange the funding and organization of the program, and who served as its administrative head and chief faculty. From the late 60s through the 70s, scores of bright



The first group of Pitt Program students and faculty met for this photo in 1967. Seated (l. to r.) are: F. Burke Sheeran, Ph.D., assistant director; Wesley Posvar, Ph.D., chancellor; Dean Donald C. Stone, Ph.D.; Joel Abrams, Ph.D., civil engineering; Professor Maurie A. Shapiro, public health; Robert S. Madancy; Louise Cohn, administrative assistant; (standing) Leonard Rodney, instructor; Robert Leonard; Russell Hooper; Douglas Robb; James Brocato; Robert N. Patrick; Martin Manning (current APWA Board Member); Charles V. Honchell; and Joseph Sunday.

Finally, APWA demonstrated its commitment in this period to strong international linkages. With APWA support, both the Canadian Public Works Association and the International Public Works Federation were founded in 1985.

The driving force behind many of these developments was Robert D. Bugher, APWA's Executive Director through virtually all these years. Bugher's retirement in 1989, after 31 years as Executive Director, marked an end of an era.

1313 was more than just a building; it was an idea

An entire generation of municipal public works administrators in North America had learned to look for information, guidance and leadership at 1313 East 60th Street, a building on the University of Chicago campus. From 1938 this building was home to the staffs of organizations serving city managers, assessors, planners, municipal finance officers, mayors, governors, police chiefs and public works officials. It was not utopia, but there were regular contacts between the small staffs of these various organizations.

They and the continuous stream of visitors, among them leaders in the fields of municipal public administration, shared information and ideas in weekly meetings. They also shared overhead costs, having a single telephone switchboard and operator for the building, as well as a print shop, mail room and joint reference library. Most importantly, they shared the vision of elevating the professional capability and recognition of all those professions serving local government.

1313 was more than just a building; it was an idea. It was located in Chicago to be closer to the concerns of local government, and removed from the older, traditional power center in New York, and from the influence of federal politics in Washington, D.C. It was also located on the campus of the University of Chicago so as to serve as a bridge between the emerging social sciences and modern public administration and practitioners.

Idea behind 1313 was strong, but reality was quite different

While the idea was strong, the reality was quite different. The ties between the associations themselves at 1313 had weakened over time as a result of the very success and growth of the individual associations. As

Firmly grounded in the engineering sciences, the new public works leader will also have to be adept at public relations, public finance, diplomacy and management.

each organization expanded its professional staffs and made internal decisions to do things for its members on its own that previously had been shared or done cooperatively, the need for communication diminished. Competition for federal and foundation grants similarly increased.

Strong ties with the University of Chicago were never established. This fact, coupled with the fact that only one other original tenant association remained in the

effective and competitive. Organizations also now recognized the need to become less bureaucratic and more responsive to customers, citizens and members. As a result, public agencies, private firms and professional associations were often called upon to provide equal or even greater services with fewer resources. It was in this context of changes and challenges that APWA moved its offices and began reorganization.



Groundbreaking ceremonies for the addition to 1313 took place in 1961 with the following leaders present: (L to r.) Orin F. Nolting, Albert W. Noonan, John D. Lange, Olga Vydra, William Moeller, Lucile Keck, Martha Gilchrist, Marion Massen, Florence Hinchey, and Ingrid Peterson.

building, fueled the motivation to upgrade the facilities at headquarters and to make visible and substantial changes in the organization. Eventually, the decision was made for APWA to move its headquarters from Chicago to Kansas City.

Decision to move is made

The relocation and restructuring of APWA was initiated in a time of economic recession. It was a period in which the public works industry experienced retrenchment and restructuring. Resources available to local governments were reduced significantly, both as a result of a declining tax base and federal policy. "Revenue shortfall" contributed to the trend of local governments to reallocate long-term infrastructure maintenance funds to social programs. The public and private sectors of the public works industry were affected. Training and travel budgets were cut. Permanent staff sizes were reduced in favor of contracting with consultants. Fiscal constraints, and the trend toward major restructuring efforts forced organizations to be more efficient,

APWA implementing new strategic plan while under new leadership

The last several years have been years of change for the professional disciplines within the public works community and for APWA. Public works services are becoming more complex and the skills required to deliver them efficiently and effectively more diverse. APWA is responding to these changes and the needs they identify. The association has been involved in an intense strategic planning exercise for almost a year, and initial indications are that major changes to meet new needs are in the wind.

The next 100 years will be heralded in by a new breed of public works leaders. Strongly grounded in the engineering sciences, the new public works leader will also have to be adept at public relations, public finance, diplomacy and management. Building on a solid tradition of service in the public interest, the new leaders will be challenged by issues and problems not experienced by their predecessors. And so it will be for the American Public Works Association, too.