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The Influence of the Pennsylvania Mainline of Public Works

Abstract

The Pennsylvania Mainline of Public Works, authorized and begun by Governor John Andrew Schulze in 1826, was the main transportation artery across Pennsylvania from the beginning of its operations in 1828 until the Pennsylvania Railroad purchased it in 1857. Though it was only in service for about thirty years, the Mainline was instrumental in shaping and affecting individuals, both passengers and employees of the canal; as well as Pennsylvania towns such as Saltsburg, Alexandria, Pittsburgh, and Philadelphia. This in turn affected national commerce.

Keywords

Pennsylvania Mainline of Public Works, transportation, Pennsylvania

THE INFLUENCE OF THE PENNSYLVANIA MAINLINE OF PUBLIC WORKS



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The Pennsylvania Mainline of Public Works, authorized and begun by Governor John Andrew Schulze in 1826, was the main transportation artery across Pennsylvania from the beginning of its operations in 1828 until the Pennsylvania Railroad purchased it in 1857. Though it was only in service for about thirty years, the Mainline was instrumental in shaping and affecting individuals, both passengers and employees of the canal; as well as Pennsylvania towns such as Saltsburg, Alexandria, Pittsburgh, and Philadelphia. This in turn affected national commerce.

A combination of factors contributed to the founding of the Mainline system. By 1825 the Erie Canal had opened and was an immediate success in terms of commerce and trade. Part of its success resulted in the siphoning of western business from Philadelphia, sending it instead through New York. Pennsylvanians interested in commerce saw the West as an enormously valuable market. They argued that the commonwealth needed an internal improvements project that would give Philadelphia “a cheap, all-water transportation line with which it could prevent the threatened New York monopoly of the western trade.”¹ Adding to this threatening situation for Pennsylvania commerce was a movement in Maryland to build a canal along the Potomac, causing the Pennsylvania state legislature to speed up its deliberations on a statewide transportation system.² With these events in mind, and the economic fate of the commonwealth hanging in the balance, a transportation system was authorized that was to “earn huge profits,” “capture the trade of the west,” and “would develop the population, agriculture, and industry of the entire state.”³ In this way the system was constructed not just to benefit Philadelphia’s national and international commerce operation, but also to “provide access to Philadelphia for the timber, mining, and manufactures of all parts of the Commonwealth, even those regions west of Allegheny Mountain.”⁴ The Mainline of Public Works was thus devised as a multi-modal system that would run east-west across the state to meet the public’s economic demands, particularly those of Philadelphia.

¹ Julius Rubin, *Canal or Railroad?: Imitation and Innovation in the Response to the Erie Canal in Philadelphia, Baltimore, and Boston*, *Transactions of the Philosophical Society*, Vol. 51, part 7 (Philadelphia: The American Philosophical Society, 1961), 15.

² Rubin, 20.

³ Rubin, 15.

⁴ Pennsylvania Historical and Museum Commission, *Historic Pennsylvania Leaflets* No. 1 (Harrisburg: Pennsylvania Historical and Museum Commission, 1951), 2.

The Mainline of Public Works was divided into five sections: The Columbia and Philadelphia Railroad (CPR), Eastern Division Canal, Juniata Division Canal, Allegheny Portage Railroad (APR), and Western Division Canal.⁵ The reason for the segmented and disjointed nature of the system was the commonwealth's geography. While much of the distance was flat enough that canals or railroad tracks could be laid, a system of inclined planes called the APR, was needed to traverse the Allegheny Mountains, through which a canal could not be feasibly built. These segments also represented the delineations in system sections as outlined in the legislation used to borrow money to fund their construction and upkeep. This is especially significant in that it notes that the system was built, owned, and operated in some form by the commonwealth. By 1834 all five divisions were completed and operational. With such diversity in the modes of transportation used, it is important to describe them in some detail.

The CPR was the first railroad in the United States operated by a government. This railroad was built in spite of the fact that the Union and Schuylkill canals, two privately-owned and somewhat obsolete canals, already conveyed goods and passengers from Philadelphia to Middletown.⁶ Although the building of an entirely new railroad was far more expensive and daunting than repairing the canals, the legislature, at the behest of Lancaster County residents who wanted the Mainline to run through their county, went ahead with their railroad plans. The reason that a railway line was settled upon rather than another more expansive canal is that the land set aside for the project was far too hilly to make a canal tenable. The railroad had two inclined planes and a 984-foot viaduct to compensate for the elevation changes of 90 and 187 feet. Among other features added to the line were lateral extensions, one of which went as far as Gettysburg. Initially, farm horses were expected to haul the cars, on which canal boats or sections of canal boats would be placed. This quickly proved ineffective because there was too much traffic on the line to be adequately handled with horses. To remedy this, the state ended up buying steam locomotives to pull the cars.⁷ To travel on the CPR, much as on the subsequent Mainline segments, one had to pay a toll. The toll collection was the commonwealth's only official duty with regard to the railroad after building it because it "was considered a public highway."⁸ Toll amounts were divided between freight, which was four cents a mile for every ton; passengers, who were a penny a mile; "wheel toll[s]," which were levied at two cent a baggage car and a penny a mile for each pair of wheels on a passenger car.⁹ With the implementation of locomotives came yet another toll on so-called "motive power."¹⁰

The Eastern Division Canal started in Columbia and paralleled the East Shore of the Susquehanna upstream past Harrisburg to Clark's Ferry and across to Duncan's Island, just off

⁵ See Appendix I as a reference to the localities mentioned.

⁶ Robert McCullough and Walter Leuba, *The Pennsylvania Main Line Canal* (York, PA: The American Canal and Transportation Center, 1976), 68.

⁷ McCullough, 68-71.

⁸ McCullough, 69.

⁹ William Hasell Wilson, *The Columbia-Philadelphia Railroad and Its Successor* (1896) (York, PA: American Canal and Transportation Center, 1985), 20.

¹⁰ Wilson, 20-21.

the mouth of the Juniata River. Incidentally, this is the modern site of the Route 22/322 Bridge over the Susquehanna. Canal boats passed from the Eastern Division to the Juniata Division via a towpath bridge over the Susquehanna such that the canal boats were pulled against the current of the river. Six locks, the only major technical innovations on this portion of the mainline, were fashioned to account for the nearly 250-foot depth differential from one end of the canal segment to the other.¹¹

The Juniata Division was a nearly 130-mile long canal that straddled the Juniata River while passing through the mountainous terrain of the Appalachians on its way to Hollidaysburg. It would prove to be one of the more difficult Mainline segments to build because of the craggy nature of the terrain through which it would flow.¹² Yet it would be among the most financially lucrative sections, finally closing in 1889 due to flood damage.¹³ At Hollidaysburg the canal boats were split apart and put on railcars to be carried over the APR.

The APR was arguably “an even greater engineering miracle” than Horseshoe Curve.¹⁴ Although it was the shortest segment of the Mainline at 36 miles, it took four years to build at a cost of \$1,600,000. Initially a four and a half mile long tunnel through the mountain was proposed, but this was deemed infeasible. Few engineers thought constructing such a tunnel with contemporary technology was possible while at the same time the ability to supply water to a tunnel at the suggested elevation was doubtful.¹⁵ Instead, engineers devised a series of ten inclined planes (five on each side of the mountain) that would carry canal boats on rail cars up one side and down the other. The cars would be moved by way of pulley systems that would be operated by two-cylinder stationary steam engines that could move “three or four cars in each direction simultaneously.”¹⁶ As the ropes used on the inclined planes had a history of breaking while pulling the cars, a special brake device was attached to the back of each car so that if the rope gave way, the car would stop rather than crash. To further remedy this problem, wire ropes began to be used in 1842. Between the inclined planes were flat stretches, along which were some of the other engineering achievements of the APR. “The most conspicuous part of the line was the Conemaugh Viaduct, which, at the time, “was considered the most perfectly constructed arch in the United States.”¹⁷ Completed in the Spring of 1833 at a cost of \$54,562.54, the purpose of this 80-foot single arch span was to carry cars over a winding section of the Conemaugh River. The viaduct was used until it was destroyed in the Johnstown Flood of 1889.¹⁸ The Staple Bend Tunnel, “the first tunnel built in America,” was the other

¹¹ McCullough, 35-36.

¹² *Ibid.*, 41.

¹³ Pennsylvania Historical and Museum Commission No. 1, 4.

¹⁴ Lois Clark, *The “Highway” that Opened the West*, Tradition 3, no. 1 (October 1960): 40.

¹⁵ McCullough, 25.

¹⁶ *Ibid.*, 63.

¹⁷ Mahlon J. Baumgardner and Floyd G. Hoenstine, *The Allegheny Portage Railroad, 1834-1854: Building, Operation, and Travel between Hollidaysburg and Johnstown, Pennsylvania* ([Ebensburg, PA]: Mahlon J. Baumgardner and Floyd G. Hoenstine, 1952), 53.

¹⁸ *Ibid.*, 53-54.

major engineering on the APR.¹⁹ It was 901 feet long and served to further shorten the distance from Hollidaysburg to Johnstown.²⁰

After traveling the APR, the boats were reassembled and started their journey on the Western Division Canal. This section ran 105 miles from Johnstown to Pittsburgh, following first the Conemaugh River and then the Allegheny. Among its many architectural features was the Pittsburgh aqueduct, the longest and most troublesome aqueduct on the mainline.²¹ It was a wooden aqueduct about 1,140 feet long and served to locate the western terminus of the Mainline in Pittsburgh and not in Allegheny, even though the latter was actually a more logical terminus. Pittsburgh then “virtually monopolized the canal business” in the Three-Rivers vicinity, which allowed the city to expand greatly during that time in comparison to Allegheny.²² The aqueduct, and with it the actual terminus of the Mainline, would play a role in the industrial developments that made Pittsburgh ‘the Steel Center of the World,’ and that would eventually give it leverage to absorb Allegheny in the early 20th century.²³ With its western terminus in Pittsburgh and its Eastern end in downtown Philadelphia, the Mainline of Public Works spanned a distance of about 395.19 miles across the commonwealth, not including lateral extensions jutting from it.

As it ran through the middle of the commonwealth, the Mainline affected people of all walks of life for different reasons. The two most common groups, passengers and canallers, came in contact with the system usually only temporarily, but their memories and experiences stayed with them for years to come. Two of the Mainline’s most noteworthy passengers were Philip Nicklin and Charles Dickens.

Philip Nicklin, writing under the pseudonym Peregrine Prolix, produced an account of his 1835 travel from Philadelphia to Pittsburgh via the Mainline. His candid account gives us insight into what the trek was like in the early stages of the system. His first experience with the Mainline system was the CPR, which he considered to have “[had] some great faults.”²⁴ He felt that “the curves [were] too numerous, and the radii generally too short,” meaning that the trip took much longer than it needed to.²⁵ He also commented on the locomotives, which were apt to throw cinders at the passengers and had a reputation for catching cars on fire.²⁶ While aboard a canal boat, he commented on the crowdedness of the quarters as being comparative to “a microcosm that contains almost as many specimens of natural history as the Ark of Noah.”²⁷ As part of his trip he stayed at the Duncan Mansion on Duncan’s Island, an

¹⁹ Ibid., 54.

²⁰ Ibid., 54.

²¹ McCullough, 50.

²² McCullough, 50.

²³ Ibid., 50.

²⁴ Peregrine Prolix (Philip Nicklin), William Shank, Intro., *Journey through Pennsylvania-1835, by Canal, Rail, and Stage Coach* (Philadelphia: Grigg and Elliott, 1836. Repub. York, PA: American Canal and Transportation Center, 1981), 19.

²⁵ Ibid., 19.

²⁶ Ibid., 19.

²⁷ Ibid., 24.

experience he thoroughly enjoyed.²⁸ This house is an example of one of the many inns along the Mainline route that benefited tremendously and which in some cases were established specifically for passengers who were traveling and not near a town at nightfall. Another such inn that was popularized on the Mainline was the Lemon House at the summit of the APR. In sum, Nicklin saw the Pennsylvania Mainline as having good qualities such as picturesque scenery and great commercial prospects, but also the negatives that are associated with travel in the Early Republic, especially by train and canal boat. He contended “that the State does not afford the public as good a commodity of traveling, as the public ought to have for the money paid.”²⁹ In this way, he alludes to the fact that the project came in well over budget. He suggested that to boost ridership, and thus profit, that daytime-only runs should be offered because he felt that people would pay to just see the beautiful Pennsylvania scenery.³⁰

In 1842, Charles Dickens, the preeminent novelist whose popularity in America at the time was second only to that of his native England, visited the United States on a long-awaited trip to gather material for his books.³¹ He traveled the country for about four and a half months, during which time he took a trip on the Pennsylvania Mainline of Public Works. Dickens traveled from Harrisburg to Pittsburgh on the Mainline, detailing vividly his experience. His first impressions of the canal boat, on a drearily rainy day, were by no means positive, as he felt his “three or four days” trip onboard would not be “by any means a cheerful one.”³² He called the boat “a barge with a little house in it” when “viewed from the outside” and like “a caravan at the fair” on the inside.³³ When it came time to sleep, Dickens talked of “three long tiers of bookshelves” each of which had “a sort of microscopic sheet and blanket.”³⁴ To his bewilderment these were, in effect, bunk beds and constituted the sleeping space onboard a canal boat. He found it so difficult to get into his bunk that he ended up lying on the floor, since it was a bottom bunk, and rolling into bed. Like Nicklin, Dickens found the quarters cramped as well. In terms of dining, he talked of all the meals being exactly the same. Many of his other recollections of his trip suggest that he found his journey quite enjoyable. Walking along the towpath, admiring the sky while laying on the boat deck, and listening to the gentle movement of the water as the boat cut through it were all things that he found pleasant on his trek. He was amazed at the innovative nature of the towpath bridge at Clark’s Ferry because of its twin deck design that allowed two boats to cross the Susquehanna at the same time. He also enjoyed the mountain scenery as he rode on the Allegheny Portage Railroad.³⁵ In sum, Dickens found certain amenities of the canal unusual and ridiculous, but on the whole he seemed to like the technology, surroundings, and overall course of his trip on the Mainline.

²⁸ *Ibid.*, 30.

²⁹ *Ibid.*, 22.

³⁰ *Ibid.*, 26 and 28.

³¹ Charles Dickens, *American Notes, 1842* ([New York]: Westvaco, 1970), 7.

³² *Ibid.*, 167.

³³ *Ibid.*, 167.

³⁴ *Ibid.*, 173.

³⁵ *Ibid.*, 173-179.

Beyond specific Mainline passengers, there were groups of people greatly affected by the canal. Probably the most notable of these were the workers, called canallers. These people were the ones who embodied the hard work and dedication needed to make the Mainline a success as they were the ones who, with their own sweat and blood, built the canal. Most of the canal workers were young single men of Irish ancestry.³⁶ A typical canaller community was usually nothing more than a “temporary settlement of ramshackle huts” a short distance from the actual worksite.³⁷ They were completely dependent on their contractors who even had the power to acquit those accused of murder on the grounds that the defendant was a faithful servant of the project.³⁸ This atmosphere worked hand-in-hand with the drinking often associated with canallers, giving local townspeople the impression that worksite shanties were nothing more than “dens of iniquity” filled with “debauched, depraved inebriates.”³⁹ Still the workers and bosses had some ties that kept order in the camps and a steady work ethic. The two sides worked well together because of their common economic needs as well as their Irish ties, both being in one way or another Irish immigrants. Marriage among canallers was a major issue as the Mainline was being built. Of those canallers who were married, few spent much time during the year with their families, mostly during the winter months.⁴⁰ Families who decided to live in the worksite shanties lived in what amounted to “male-dominated temporary communities” because of the disparate male to female ratio in the camps where women held a role completely dependent and subordinate on men.⁴¹ The women often served in domestic roles where they usually catered to the needs of the whole camp, not just their family. This helped to provide some stability in a camp whose “social arrangements were by necessity makeshift and temporary” which in turn would have helped productivity.⁴² In some ways, these two family situations served to dissolve the nuclear family structure among canallers. Although the life of canallers was harsh in some respects it did offer a functional employment opportunity to immigrant workers and was a way of life in which there was some commonality of goals among all of those involved.

The Mainline had a great effect on the development of the towns along its route. Nicklin observed that the towns were “all rapidly increasing in wealth and population, in consequence of the great amount of business done on the canal.”⁴³ This is clearly shown by the system’s impact on Saltsburg, Alexandria, Pittsburgh and, Philadelphia, which all saw change, both positive and negative, because of the canal.

Saltsburg was laid out in 1816-17 at a bend in the Conemaugh River in Indiana County, about thirty-one miles from Pittsburgh. It began as a small, sparsely populated town

³⁶ Peter Way, *Common Labour: Workers and the Digging of North American Canals 1780-1860* (New York: Cambridge University, 1993), 168.

³⁷ *Ibid.*, 164.

³⁸ *Ibid.*, 164.

³⁹ *Ibid.*, 165.

⁴⁰ *Ibid.*, 164, 169.

⁴¹ *Ibid.*, 168.

⁴² *Ibid.*, 168.

⁴³ *Prolif*, 31.

with “primitive means of access;” those being overland and by navigating the river.⁴⁴ Yet it was strategically located near some of the most important resources of the day.

First and foremost was salt, the town’s namesake. It became such a central product of Saltsburg that the town became “the center of the salt trade of the county.”⁴⁵ Salt was found in lowlands along the river and was extracted by drilling holes in the ground and then using horses to pump it out with water. Later, steam engines would be used for pumping and drilling, making the process faster and more efficient. Then this salt water was boiled off until only the briny byproduct remained.⁴⁶ As salt was used “as a food preservative, seasoning, and as a tanning ingredient,” it was of great importance to the citizens of the Early Republic and often sought after in commercial trade because of the difficulty involved in mining and processing it.⁴⁷ The Conemaugh as a salt source came into its own with the War of 1812 and the subsequent British blockade of Lake Erie, which was the usual trade route for salt from New York to Western Pennsylvania and the Midwest.⁴⁸ This led to an overall increase in the salt trade in the region and the establishment of salt as the predominant resource of Saltsburg.

There were other resources, though, that were of just as much importance to the general public as salt and thus to the business interests in and around Saltsburg. Timber was significant as building material as were some of the types of stone indigenous to the area. The Saltsburg area was “part of the fourth great coal basin West of the Allegheny Mountains.”⁴⁹ Iron ore and limestone were also prevalent in the area.⁵⁰ Saltsburg’s proximity to these resources and its location on the Conemaugh made it an ideal port for the canal.

The canal was built eastward from Pittsburgh and westward from Blairsville, leaving Saltsburg in the middle.⁵¹ On May 15, 1829, the canal became operational in Saltsburg, and changed the cultural and commercial climate of the borough forever. What was once just a sleepy town in the wilderness East of Pittsburgh became a major port on the Western Division of the Pennsylvania Mainline of Public Works. There was an almost immediate increase in the amount of salt and coal exported from the town and surrounding area. During the canal’s heyday roughly twenty-one salt works were running in the Saltsburg area.⁵² This increase in salt production was made even easier by the fact that “all the [salt] wells were directly on the line of the canal.”⁵³ This made the transporting and transferring of processed salt even easier and cheaper for the works’ owners who otherwise would have had to have paid hauling fees to get their salt to the canal docks. Indiana County, for which Saltsburg was one of the biggest

⁴⁴ Sara Amy Leach; Dorothy Burlingame, Karen Genskow, and Kristin Belz, *Two Historic Pennsylvania Canal Towns, Alexandria and Saltsburg* ([Washington, D.C.]: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1989), 145.

⁴⁵ *Ibid.*, 151.

⁴⁶ *Ibid.*, 144.

⁴⁷ *Ibid.*, 144.

⁴⁸ *Ibid.*, 144.

⁴⁹ *Ibid.*, 141.

⁵⁰ *Ibid.*, 141-144.

⁵¹ George B Johnson, *Saltsburg and the Pennsylvania Canal* ([Saltsburg, PA]: George B. Johnson, 1984), 16.

⁵² *Ibid.*, 26.

⁵³ Leach, 149-150.

ports, went from producing 7,000 tons of coal in 1820 to approximately 31,000 tons in 1838, just four years after the whole public works system was opened.⁵⁴

Not only did the canal enhance the standard Saltsburg industrial operations, but it also facilitated and in some cases necessitated new ones that sprung up because of Saltsburg's prominence on the canal. Many of these were directly related to the canal such as inns, eateries, passenger-packet services, and boat building shops.⁵⁵ These businesses brought lucrative jobs and revenue to the town of Saltsburg and greatly developed its importance on the Mainline of Public Works. It was also influential in bringing "large grain and flour businesses . . . that began to tap the agricultural resources" of the area, which needed an outlet to the Eastern markets for their goods.⁵⁶

This business boom caused many domestic changes in the town as well. Before the canal came the only religious denomination in town was Presbyterian, befitting the region's mostly Scots-Irish settlers. The town had just twenty houses and few other buildings besides the church and two taverns. After the canal was built, Roman Catholics and Baptists started to move into town. By 1840 the town and surrounding area had five schools, and by 1851 classes were being held in the town's first high school because of the influx of people brought to Saltsburg by the canal.⁵⁷ This made Saltsburg a more diverse and cosmopolitan town in comparison to its frontier-like days before the canal had been built.

Saltsburg's whole dynamic and existence were transformed because of the canal. It gave them a more efficient means to ship their goods to the major cities and opened the town to the outside world. This in turn caused the population and the demographics of the town to surge. What was once a sleepy little Presbyterian town gave way to the hustle and bustle of the Market and Transportation Revolutions, bringing all sorts of different people to Saltsburg to help establish new businesses and to seek employment. Thus the canal had a positive impact on Saltsburg.

In Huntingdon County along the Juniata River is located the borough of Alexandria. The town was first settled in 1793 by mostly Scots-Irish Presbyterians, just as Saltsburg had been. It did not actually grow enough to be incorporated until 1827. Most of Alexandria's early business was "designed for local production and consumption."⁵⁸ Iron forges began to open nearby and so this became the leading local industry. By 1810 "Alexandria's population was 751."⁵⁹ Although it was a relatively small borough, it did have its own stagecoach office, showing that even early on it was of some importance to east-west travel in Pennsylvania.

By 1833 the Juniata Division of the Mainline had come to Alexandria and was operational. The route of the canal, unlike in Saltsburg, went right through the heart of Alexandria.

⁵⁴ Leach, 149.

⁵⁵ Leach, 150.

⁵⁶ *Ibid.*, 151.

⁵⁷ *Ibid.*, 143, 146, 155-156.

⁵⁸ Leach, 33.

⁵⁹ *Ibid.*, 33.

The canal commissioners had simply found the flattest land in town that also allowed them to build the canal in a straight line parallel to the river, without regard for the private property affected. While in Saltsburg all the residents needed to do was build a few bridges over the canal, some of the Alexandria's residents lost much of their land, with the only recourse being to file a damage claim with the commonwealth.⁶⁰

The land losses were greatly offset by the canal's economic impact, which was felt immediately after it opened. Warehouses and businesses began to crop up in town as a trading boom began, particularly in iron. Among the other businesses that established themselves in town were tanneries, mills, and a brewery. Much as in Saltsburg, the canal brought all sorts of people to Alexandria. By 1851 the town had not only Presbyterians, but a sizeable number of Methodists and German Reformists as well. A school board was elected in 1842, which coincided with the opening of public schools in Alexandria.⁶¹ As these people came to work, learn, and live in Alexandria, the town became a more diverse community.

In spite of the property loss incurred by some of its residents, Alexandria was transformed into a trade center because of the canal. Just as in Saltsburg, the canal brought with it an influx of commerce and different groups of people that all helped to enhance to borough and made it a major commercial center in Central Pennsylvania. During the canal years, Alexandria enjoyed great success and growth, in a way that it would never see again. Therefore, with one exception, the canal was beneficial to Alexandria.

Pittsburgh, located at the confluence of the Allegheny, Monongahela, and Ohio Rivers, was a natural trade center for goods traveling to and from the western United States as well as New Orleans, making it in many ways Pennsylvania's gateway to the West. Much of the city's efforts prior to the Mainline went into "market expansion and development of home industries."⁶² This economic motive gave them reason to petition for the Mainline. Pittsburgh's trading capabilities increased considerably after the system was operational. By 1835 the city was shipping 101,725 barrels of flour from the West went Eastward, with some of it going to Europe. Pittsburgh also shipped a wide variety of other products in large quantities via the Mainline, including butter, bacon, cheese, feathers, and wool.⁶³ The city was also a large importer of goods shipped over the Mainline. In fact, Pittsburgh became such a large importer that "merchandise shipped to Pittsburgh in 1835 was the largest item in any class carried over the State System."⁶⁴ Befitting the city's more sophisticated nature by this time, furniture was among the major imports, 1,390,767 pounds of which was imported by Pittsburgh in 1847 alone.⁶⁵

⁶⁰ Ibid., 38.

⁶¹ Ibid., 39-40, 42.

⁶² Catherine Elizabeth Reiser, *Pittsburgh's Commercial Development 1800-1850* (Harrisburg: Pennsylvania Historical and Museum Commission, 1951), 115.

⁶³ Ibid., 102-103.

⁶⁴ Ibid., 105.

⁶⁵ Ibid., 106.

Industrially speaking, Pittsburgh began to develop greatly with the opening of the Mainline. “To the Pittsburgh iron interests, the mainline was a lifesaver.”⁶⁶ The iron manufacturing capacity of the city was realized at this time, as was exhibited by the high amount of iron imported during the Mainline years.⁶⁷ Much “of the iron was sent to Pittsburgh for manufacture and then transported east again,” showing that the Mainline served not only to bring iron into the city, but also provided the principal means for exporting finished products.⁶⁸ In an effort to further increase this business, Pittsburgh supported the building of the Cross-Cut Canal, an extension of the Mainline into Ohio, which would allow for a better trade connection with Cleveland. Soon after the Cross-Cut Canal opened, huge shipments of iron were exported to Ohio.⁶⁹ This trade became so lucrative that George Hutton, a local canal agent, “estimated that about one hundred tons of iron...and Pittsburgh manufactured articles passed weekly to Cleveland throughout the summer of 1840.”⁷⁰ In having connections to Cleveland, Pittsburgh was also able to tap into the Great Lakes trade and profit from commercial relationships with cities such as Detroit. Therefore the Mainline was in some ways instrumental in advancing Pittsburgh’s commercial capabilities through connections with Philadelphia and later Cleveland, which in turn benefited its industry, particularly in iron manufacturing.

Philadelphia, the commonwealth’s largest city and Atlantic port, had agitated for years for a more efficient transportation route to Pittsburgh so that the city had access to the Western markets. With the building of the Erie Canal, this urgency became greater as shown by “many of Philadelphia’s largest financial institutions went into bankruptcy” because the city was unable to attract business.⁷¹ Where in 1795 Philadelphia exported 40% more goods than New York City, by 1825 the city was at a 45% deficit to its Northern neighbor.⁷² Philadelphia was also losing ground to Baltimore at the time. “Historically Philadelphia had prospered as the ‘bread basket’ of the colonies,” but this had started to change.⁷³ By 1825 Baltimore was exporting 216, 000 more barrels of flour than Philadelphia.⁷⁴ Philadelphia desperately needed a new trade route to remain economic viable.

With the completion of the CPR and the complete system opening soon thereafter, Philadelphia finally received this route. Philadelphia was able to quickly use the Mainline to export large quantities of manufactured goods to the West.⁷⁵ The system also allowed goods to be shipped much more cheaply from western trade centers than from the Erie Canal. For example, it cost \$1.30 per hundred pounds to ship goods from Cincinnati to Philadelphia,

⁶⁶ Rubin, 16.

⁶⁷ Reiser, 107.

⁶⁸ Rubin, 16.

⁶⁹ Reiser, 119.

⁷⁰ *Ibid.*, 120.

⁷¹ McCullough, 19.

⁷² *Ibid.*, 19.

⁷³ Russell F. Weigley, ed., *Philadelphia: A 300-Year History* (New York: W.W. Norton, 1982), 265.

⁷⁴ James Weston Livingood, *The Philadelphia-Baltimore Trade Rivalry 1780-1860*. (New York: Arno, 1970), 26.

⁷⁵ Reiser, 103.

while it cost \$2.40 to ship them from Cincinnati to Albany using the Erie Canal.⁷⁶ This allowed Philadelphia to cut into the Western trade that often utilized the Erie. The cheap fares also helped Philadelphia to gain an edge over Baltimore and its National Road trade.⁷⁷ The coalfields of Northeastern Pennsylvania could be more easily tapped into after the Mainline and some of its lateral extensions had been completed, enabling Philadelphia to develop its anthracite iron industry and the city's other profitable coal markets.⁷⁸ Thus "Pittsburgh and Philadelphia controlled the bulk of the commerce to and from the rich Ohio Valley."⁷⁹

After becoming fully operational in 1834, "the mainline soon did a very considerable business, though it never became a strong competitor of the Erie."⁸⁰ For example, in 1847 the Erie hauled 1,661,575 tons of goods compared to a mere 234, 229 tons that traveled via the Mainline.⁸¹ In the same year, Baltimore exported roughly \$9,000,000 worth of goods to Philadelphia's \$8,000,000, showing that the Mainline could not compete with the Chesapeake and Ohio Canal either.⁸² For one thing, there were constant delays caused by the changes from canal boat conveyance to rail car, as well as the need to split up boats and cargo when traversing the APR; these made the Mainline rather infeasible in comparison to the Erie Canal, which was an all-water with no change over of transportation modes.⁸³ Beyond that, it had no real speed advantage and only a slight climatic advantage over the Erie. In fact, by 1839 it became apparent to some shippers that it was more efficient "to send [goods] down the Mississippi to New Orleans, then by ship to Philadelphia, than to use the mainline."⁸⁴ By not attracting business via the Mainline, Philadelphia was unable to benefit as much from western trade. This meant, "The great business boom which Philadelphia anticipated did not mature."⁸⁵ This was not the only factor to cause the Mainline's demise. As "no attempt was ever made to relate toll charges realistically to canal maintenance and amortization requirements," the commonwealth simply never accumulated the money it needed to make operating the Mainline feasible.⁸⁶ The debt from the system became so immense that the legislature had to enact an entire tax bill in 1840 to help pay it down, a move that was unpopular with taxpayers.⁸⁷ By 1842 the commonwealth was unable to meet the interest payments on the Mainline loans, which by that point totaled over \$33,000,000.⁸⁸ Finding the Mainline to be a financial sinkhole, the commonwealth attempted to sell the system in 1844 for \$20,000,000, but no one wanted it because it was earning less than three percent of its original cost.⁸⁹ Finally in 1857 the Pennsylvania Railroad, which

⁷⁶ Ronald E. Shaw, *Canals for a Nation: The Canal Era in the United States 1790-1860* (Lexington, KY: University Press of Kentucky, 1990), 74.

⁷⁷ McCullough, 86.

⁷⁸ Livingood, 79-82.

⁷⁹ McCullough, 86.

⁸⁰ George R. Taylor, *Transportation Revolution 1815-1860, The Economic History of the United States*. vol. 4. (New York: Rinehart, 1951), 44.

⁸¹ Henry Varnum Poor, *History of the Railroads and Canals of the United States of America* (New York: August M. Kelley, 1970), 367; Shaw, 67.

⁸² Livingood, 25.

⁸³ Taylor, 44.

⁸⁴ Rubin, 16.

⁸⁵ Livingood, 22.

⁸⁶ McCullough, 91.

⁸⁷ McCullough, 33.

⁸⁸ Carter Goodrich, *Government Promotion of American Canals and Railroads 1800-1890* (Westport, CT: Greenwood, 1974), 67.

⁸⁹ Goodrich, 68.

had been usurping business from the Mainline since it opened in 1852, bought the system for \$7,500,000, which had by that point cost the commonwealth \$58,000,000.⁹⁰ “Pennsylvania had spent more on new canal construction than any other state,” and had not reaped anywhere near the benefits, especially when compared to the Erie Canal.⁹¹

In hindsight, it would appear that the commonwealth would have been better served by building an unbroken railroad to Pittsburgh, rather than the multi-modal monstrosity that was developed. A “movement for a continuous railroad began only four years after completion of the mainline,” showing that some had seen early on the error of building the Mainline of Public Works.⁹² Even before the Mainline was built one of its engineers, who had examined canals and railroads in England, suggested that rail line be constructed instead.⁹³ A railroad would have given businesses and passengers an all-weather alternative to the Erie that could have run year-round and that would not have been dependent on water levels, which could be easily manipulated by floods and droughts. Oddly enough, at the time deliberations over the Mainline were brewing, the British were involved in some rather extensive trials that by 1829 had determined the bright possibilities for railroads.⁹⁴ Had Philadelphia become involved in these trials, the city might have been able “to take immediate advantage of advances in railroad technology.”⁹⁵ This in turn might have allowed Philadelphia to take the lead in the East Coast trade rivalry, causing the commonwealth to grow and develop as well. To that end, it could be postulated that had a railroad been built across Pennsylvania, the commonwealth would have potentially received the new industries, businesses, and immigrants that went to New York because of the Erie Canal’s success. As it was, Philadelphia became disgusted with the apparent failure of the Mainline and took a disinterested stance toward further internal improvements in Pennsylvania.⁹⁶

Although the Pennsylvania Mainline was a long-term fiscal disaster for the commonwealth, the system had a positive effect in that “the benefits resulting from their development of the resources of the Commonwealth, from the opening up of extensive sections of country which otherwise would have been shut out from a market, and from the impetus given to trade and industrial pursuits of all kinds.”⁹⁷ In this way, the Mainline brought about an “outward-looking and expansionist mentality [that] can be said to be the . . . single most important contribution that the canal era made to the synergy of 19th-century urban life.”⁹⁸ The Mainline caused businessmen to think about developing cities into modernized manufacturing centers

⁹⁰ Ibid., 68-69.

⁹¹ Taylor, 45.

⁹² Rubin, 15.

⁹³ Shaw, 232.

⁹⁴ Rubin, 17.

⁹⁵ Ibid., 18.

⁹⁶ Livingood, 22.

⁹⁷ William Hasell Wilson, *Notes on the Internal Improvements of Pennsylvania* (Philadelphia: Railway World, 1879), 56.

⁹⁸ Ronald C. Catlisle, ed., *Canals and American Cities: Assessing the Impact of Canals on the Course of American Urban Life* (Easton, PA: Canal History and Technology Press, 1994), 33.

that catered to a more national and global market as opposed to the local industry they were invested in before the system's existence.

The Pennsylvania Mainline of Public Works served to increase trade and commercial development in the towns and cities of the commonwealth. Small boroughs such as Saltsburg and Alexandria boomed while Pittsburgh found the system advantageous for developing its iron industry, which would lead to its dominance in steel. The Mainline also served as the conveyance of many notable people and the text setting for writings such as Dicken's American Notes. Its purpose in securing western trade and bolstering local development as well as its impact on canallers was typical of canals during the mid-19th century. Yet the Mainline's unique design combined canals and railroads to solve for well-known geographic obstacles, but ultimately prevented it from becoming profitable because of the constant delays inherent in such a system. In this way, the commonwealth would have been better served with a continuous rail line. Yet without the Mainline of Public Works such engineering wonders as the APR, Conemaugh Viaduct, and Staple Bend Tunnel would have remained ideas instead of becoming the reality that they were. It is unlikely that Governor Schulze could have envisioned in 1826 the course that the Mainline would take and the role that it would play in Pennsylvania's future. During its run the Mainline of Public Works did indeed greatly affect the municipalities and individuals that became involved with it, thus influencing in some way much of the Commonwealth of Pennsylvania and the United States as a whole.

