

AIME 150th Anniversary

Local Area Information, Field Trip Detail, and Optional Tours

Hyatt Place Hotel – AIME 150th Anniversary Lodging



Hyatt Place
45 West North Street
Bethlehem, PA 18018
610-625-0550

LEHIGH UNIVERSITY MAIN CAMPUS AIME 150th ANNIVERSARY PLAQUE DEDICATION

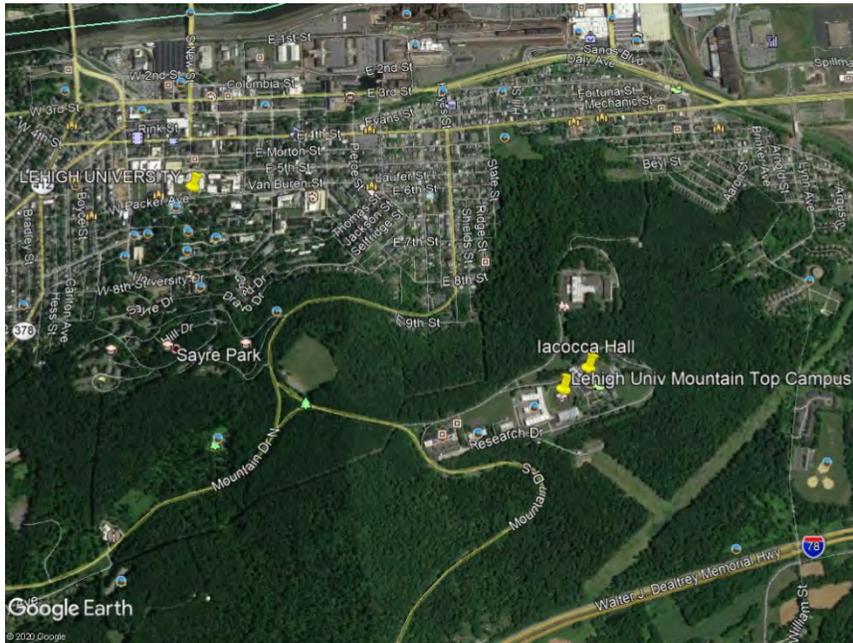
The Lehigh campus is located about 1.5 miles from the Hyatt Place Hotel. The AIME 150th Anniversary Plaque will be dedicated next to Packard Hall (looking toward the site of the 2nd meeting of the Institute, Packer Hall). The campus is on a steep hill. Allow a minimum of 1 hour for a walking tour. Detailed campus maps available at Alumni Hall. Parking is available in the adjacent Alumni Parking Pavilion.



Packard Hall – AIME 150th Plaque Location
Packer Hall/University Center (AIME 1871 Meeting Site)
Coxe Mining Engineering Laboratory (1910), now Coxe Hall
Fritz Engineering Laboratories (1915 and 1954)

LEHIGH MOUNTAIN TOP CAMPUS (Former Bethlehem Steel Research Center) AIME 150TH ANNIVERSARY PROGRAM AND BANQUET

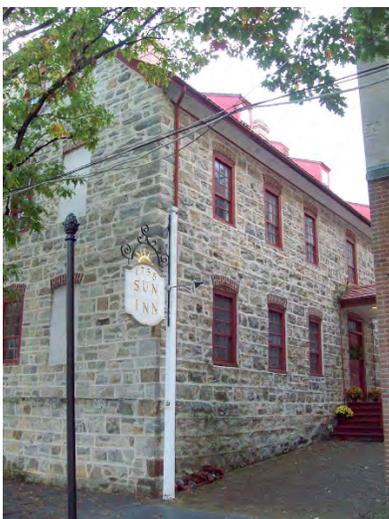
The Lehigh Mountain Top Campus is located about 2.5 miles south of the main campus. The former Bethlehem Steel Homer Research Laboratory facility is being adapted for educational and research purposes. The AIME 150th Anniversary Program and Banquet will be held in the Iacocca Center. Take a personal walking tour of this new addition to the Lehigh campus.



Iacocca Conference Center - 150th Anniversary Presentations

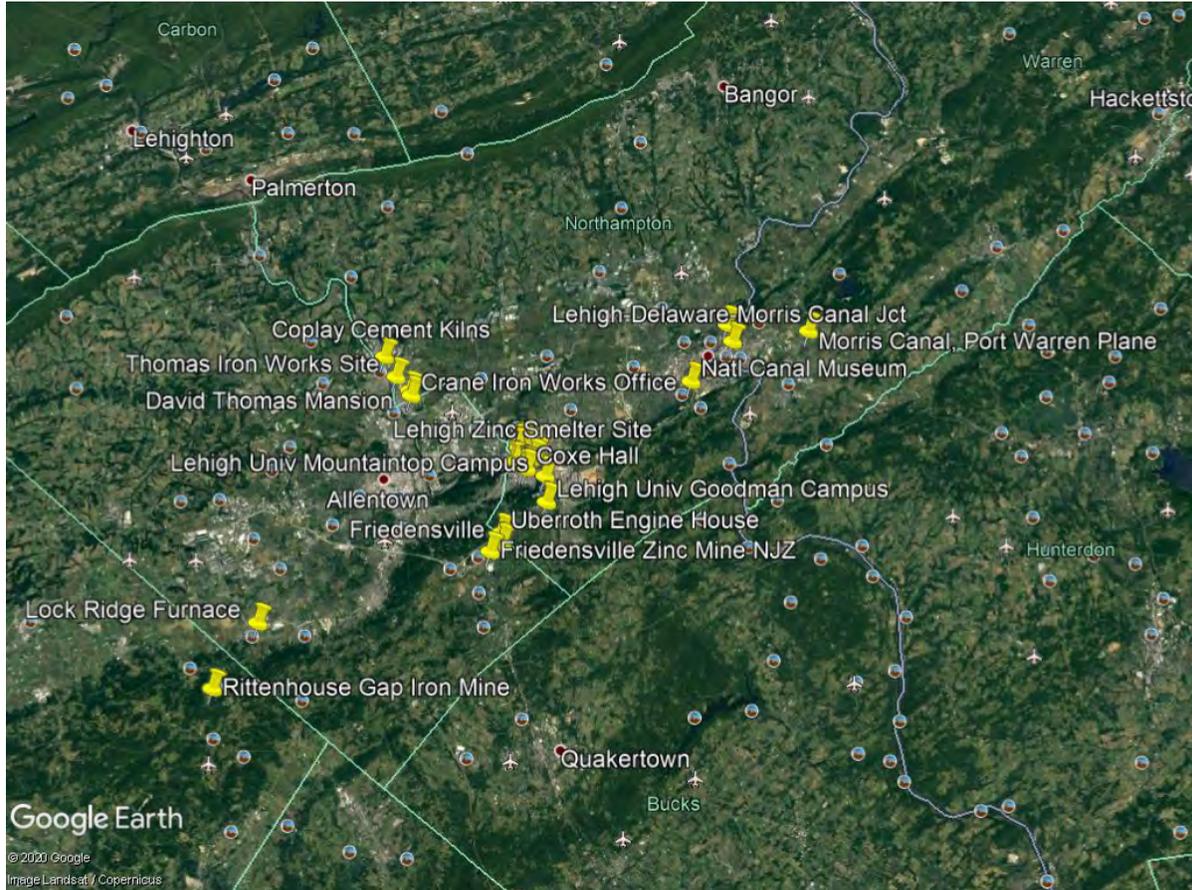
Sun Inn – Informal Saturday Night Dining

<https://suninnbethlehem.org>



(Left) The historic Sun Inn at 564 Main Street has been around since 1758. George Washington visited the Sun Inn. AIME used to hold meetings here in the early days.

FIELD TRIP DETAIL OVERVIEW MAP OF SIGHTS IN THE BETHLEHEM AREA



The Bethlehem area has a variety of historical mining and metallurgical sites relating to the anthracite coal, zinc, iron and steel, cement, and transportation industries. **For those able to stay, on Monday, October 4, 2021, we've arranged a private charter to do the highlighted ones below. Pick up will be at 8:00a and drop off will be at 5:00p at the Hyatt Place Bethlehem. Lunch will be provided.**

- Friedensville Zinc Mining District Driving Tour (pages 5-8)
- Drive from Friedensville to Atlantic Carbon (pages 9-10)
 - Drive by Catasauqua (The Lock Ridge Furnace Complex), Palmerton (Jersey Zinc Plant)
 - Drive by Jim Thorpe, Stockton Mine Disaster Site
- Tour Atlantic Carbon Stockton Open Pit Anthracite Mine (page 11)
- Drive-by Anthracite King Dragline (Ebervale, PA), Coxe House (page 11)
- Drive to Sand Springs, Lunch at Sand Springs Country Club (page 11)
- Drive to Wilkes Barre, Drive by Rothwell House, PHMC Marker (pages 12-13)
 - Walk around Public Square Wilkes Barre AIME Plaques, Anthracite Mines Wall of Honor
 - Irem Temple (1921 AIME Meeting), Kings on the Square anthracite mining art
 - AIME Roadside Marker
- Drive to Eckley's Miners Village Museum and Tour (page 13)
- Return to Hyatt Place Bethlehem (page 14)

Optional Tours (On your own)

- Downtown Bethlehem Walking Tour (pages 15-19)
- Bethlehem Southside Historic District Driving Tour (pages 20-23)
- Easton-National Canal Museum Driving Tour (pages 24-27)
- Catasaqua and Alburtus - David Thomas Driving Tour (pages 28-31)

Maps for the above are on pages 31-35.

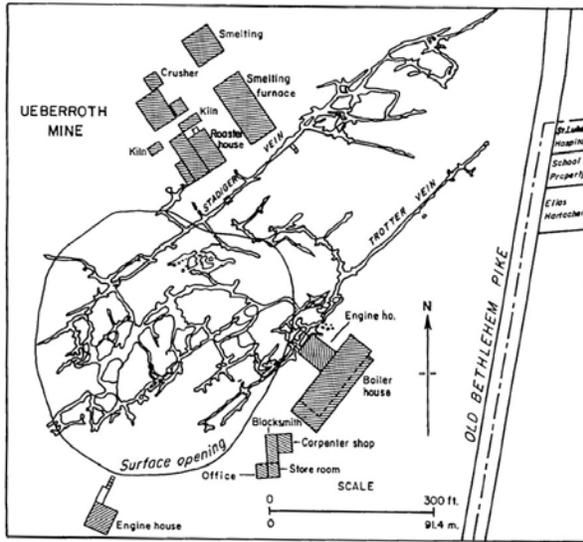
FRIEDENSVILLE ZINC MINING DISTRICT TOUR SITE VISIT Monday, October 4, 2021 morning

The district is located about 4 miles (6 min.) from the Iacocca Hall, Lehigh Mountain Top Campus and about 5 miles (9 min.) from the Hyatt Place Hotel. Five mines in Friedensville supplied zinc ore to the Lehigh Zinc and Iron Company's zinc oxide plant and smelter in Bethlehem and other plants from 1852 to 1890. "The President" Cornish Engine House (ca1872) at the Uberroth Zinc Mine is the only remaining such engine house in the US and Canada. It held "The President," the largest steam engine of its type ever built. The engine was named for President U. S. Grant. Some early preservation work is underway with the tentative plan to redevelop the site as a heritage park.

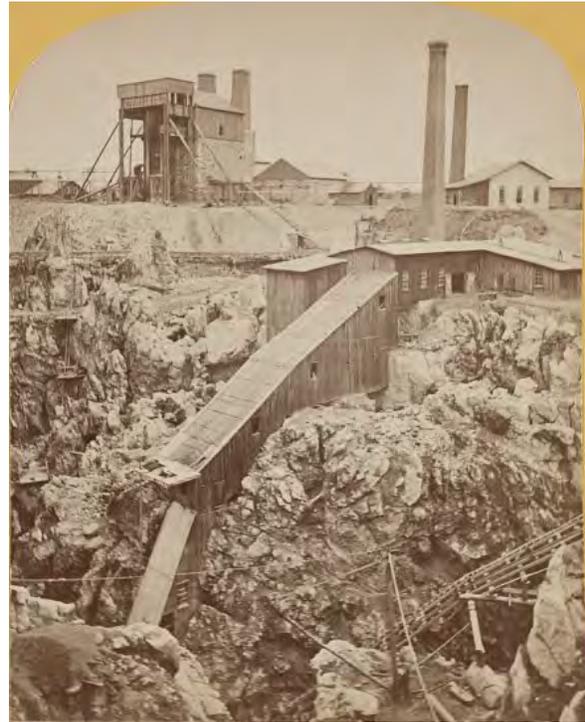
Mining in the district was restarted by the New Jersey Zinc Company in 1954. The Friedensville Zinc Mine operated until 1981. The stope and pillar mine workings extend throughout much of the area west to the quaint village of Friedensville. The mine's surface plant can still be seen. After mine closure the extensive NJ Zinc property holdings were purchased for redevelopment by Stabler-Eastern Industries. Stabler later donated the remaining undeveloped land to Lehigh University, including the historic mine sites.



Uberroth Zinc Mine and Historic Cornish Pumping Engine House, 1853-1890.



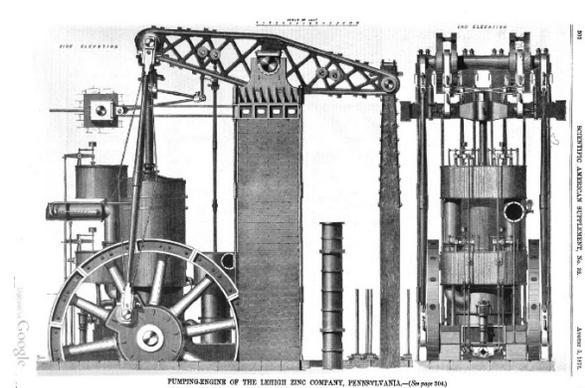
(Above) Map of Uberroth Mine Facilities. (PA Geological Survey)



(Right) A ca1876 view of the Uberroth Mine, Mill and Suspended Hoist (right), and "The President" Cornish Engine House (top). (Library of Congress)



"The President" Cornish Engine House before preservation work. (2018 photo)



"The President" Pumping Engine, the world's largest steam engine of its type. It was designed to pump 17,000 gallons/minute. (Scientific American, 1876)

Friedensville Mining Village



Friedensville Historic Church.



Uberroth Mine Superintendent's house.

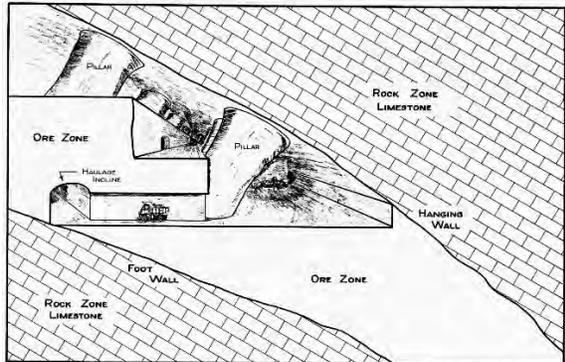
New Jersey Zinc Friedensville Mine (1954-1981)



The New Jersey Zinc Friedensville Mine, Mill, Shops, and Office. (1955).



Stabler-Eastern Industries buildings (2018).



CROSS SECTION
SHOWING
PROPOSED MINING SYSTEM
FOR FRIEDENSVILLE
-LOOKING EASTERLY -

(Left) Diagram of the open stope mining system at the New Jersey Zinc Friedensville Mine. (New Jersey Zinc Co.)

Post-Mining Redevelopment by Stabler-Eastern Industries and Lehigh University includes the Penn State Lehigh Valley Campus; Saucon Valley Mall; Corporate Center; Aldi Distribution Center; Center Valley Parkway; Mining Heritage Park (Future).



Penn State Lehigh Valley Campus.

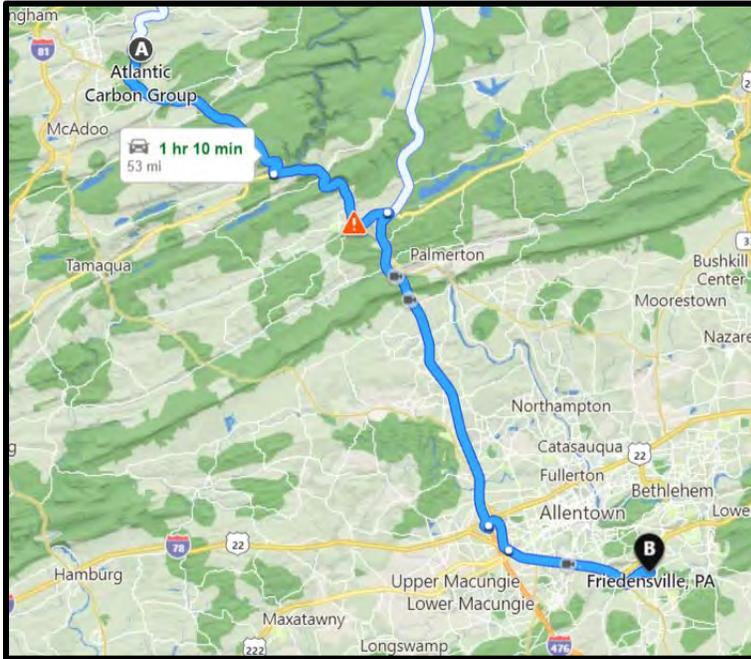


Aldi Distribution Center.

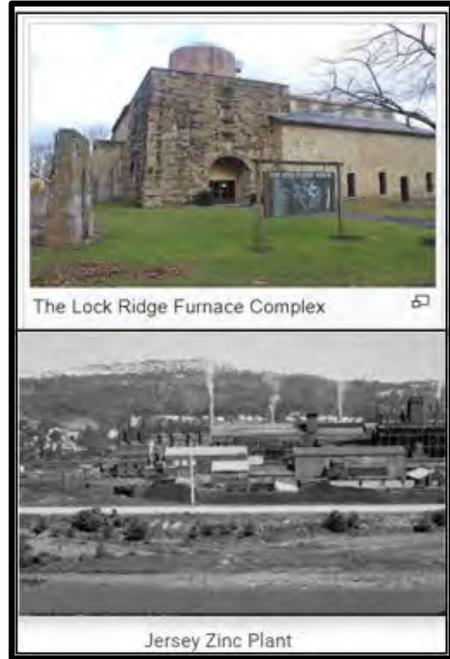


Historic Friedensville Mines (yellow), NJ Zinc Friedensville Mine (red), with redeveloped land. (Kaas 2014)

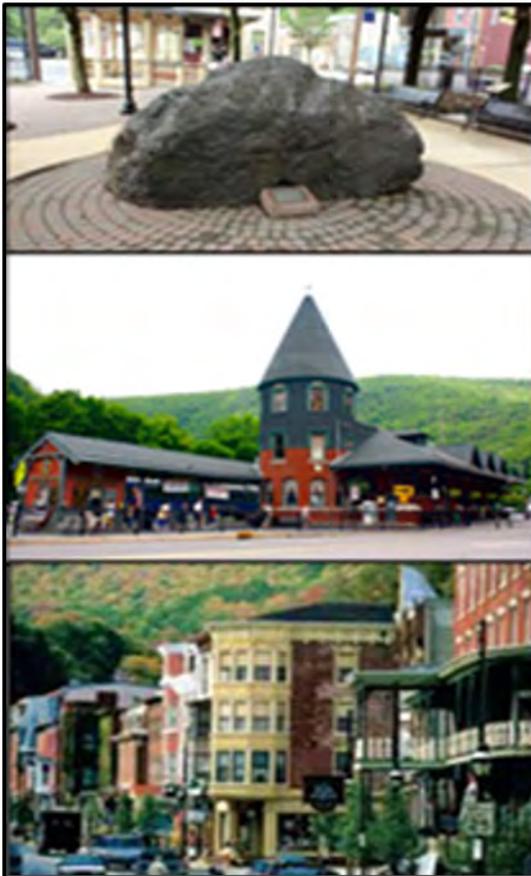
Drive from Friedensville to Atlantic Carbon,



drive by Catasauqua, Palmerton



Drive by Jim Thorpe, Stockton Mine Disaster Site



PALMERTON, PENNSYLVANIA, “ZINC CITY” (1898 - 1981) A NEW JERSEY ZINC COMPANY TOWN

Palmerton, PA, is located 22 miles north of Bethlehem, PA via Highway 248. The AIME Tour will drive by many of the historic sites in Palmerton.



In 1897, the “Great Consolidation” took place in the zinc industry creating the New Jersey Zinc Company (NJZ). The Lehigh Zinc and Iron Company, the Passaic Zinc Company (with the Bergen Point Zinc Company and the Bertha Mineral Company), the Mineral Point Zinc Company, and a predecessor New Jersey Zinc Company merged. This merger resolved decades of litigation about the mining and mineral rights in Franklin and Sterling Hill, NJ. Several other companies were acquired shortly thereafter. NJZ decided to close the many separate and inefficient zinc smelters and to construct new, modern smelting facilities in rural Palmerton, near the anthracite coalfields. The facilities were divided between two locations, the West Plant Area started in 1898, and the East Plant Area started in 1910. These two plant sites included the West Oxide Plant, East Oxide Plant, Slab Zinc Plant, Rolled Zinc Plant, Spiegeleisen Plant, Lithopone Plant, Sulfuric Acid Plant, and Chestnut Ridge Railroad.

The company also built a modern town to house and meet the day-to-day needs of its employees. Palmerton was incorporated in 1912 and featured many of the paternalistic features of modern company towns of the day, including a large central park, schools, a hospital, and a community center called the Neighborhood House. The headquarters of the NJZ subsidiary, The New Jersey Zinc Company of Pennsylvania, and a research laboratory were also constructed. By 1930, NJZ had 3,000 employees in Palmerton. Many of the historic buildings remain in Palmerton’s downtown area.

When the smelter and related plants closed in 1981, they were designated as a Superfund site. The once-forested slopes of Blue Mountain, south of the town, had suffered extensive damage from smelter fumes. Demolition, cleanup, and revegetation projects have since been completed.

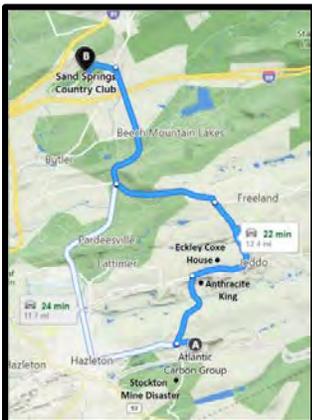
Tour Atlantic Carbon Stockton Open Pit Anthracite Mine



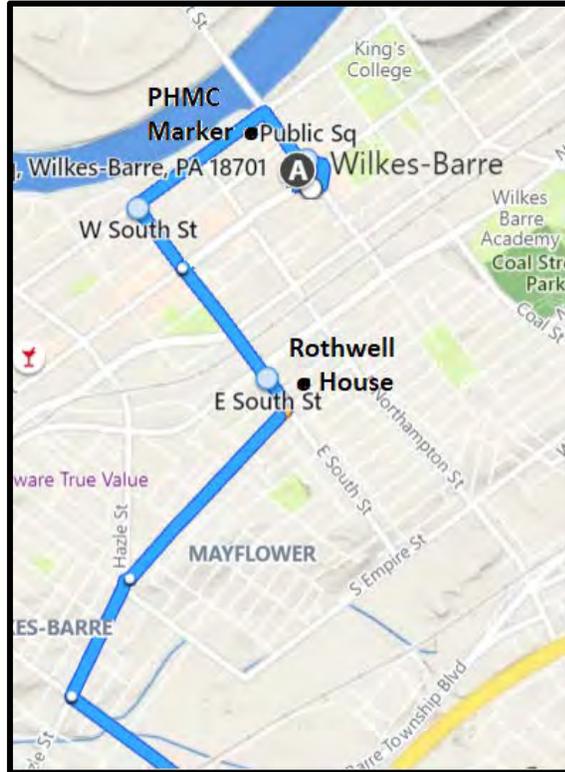
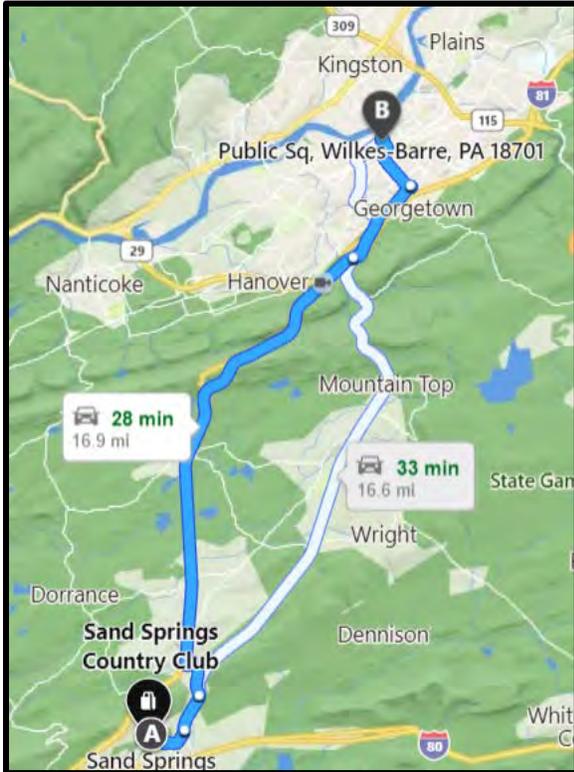
Drive-by [Anthracite King Dragline](#) (Ebervale, PA), Coxe House



Drive to Sand Springs, Lunch at Sand Springs Country Club



Drive to Wilkes Barre, Drive by Rothwell House, PHMC Marker



Drive By Rothwell House, PHMC Marker



Walk around Public Square Wilkes Barre AIME Plaques, Anthracite Mines Wall of Honor

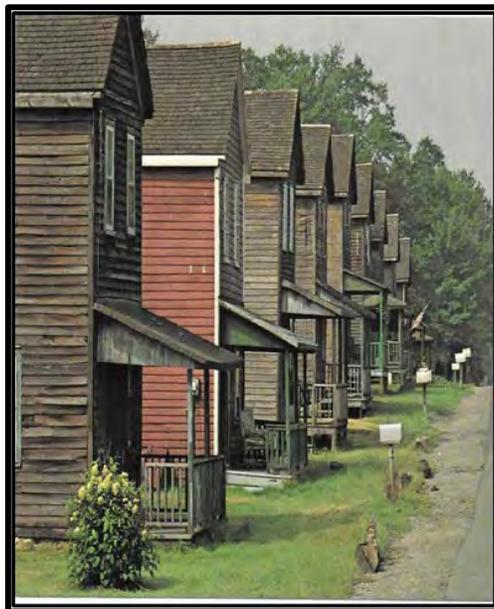


Irem Temple (1921 AIME Meeting), Kings on the Square anthracite mining art



Drive to Eckley's Miners Village Museum

Tour Eckley



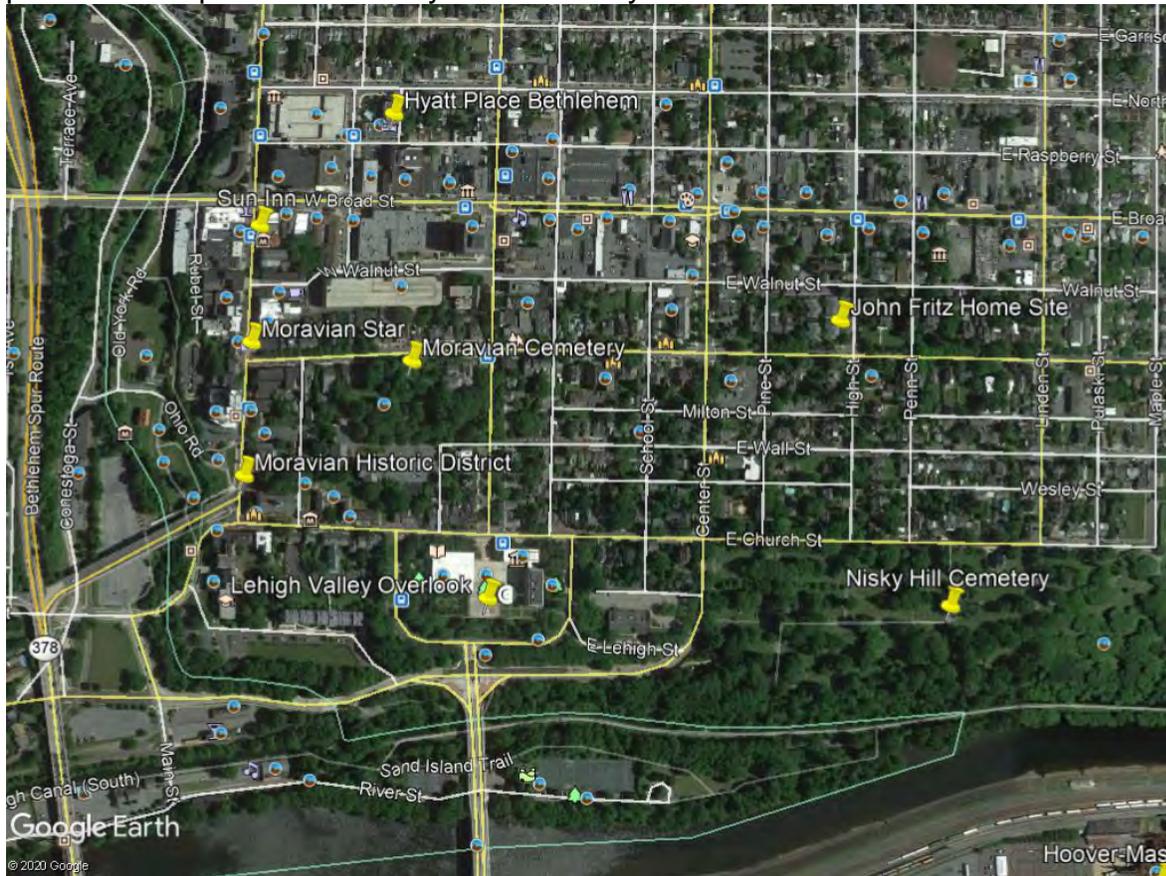
OPTIONAL TOURS/ADDITIONAL REGIONAL INFORMATION



Aerial view of the Bethlehem Steel Homer Research Center. The Bethlehem Steel Works, now the Steel Stacks, can be seen in the distance along the Lehigh River. The main campus of Lehigh University is below the hill top to the left. (Hagley Museum photo)

DOWNTOWN BETHLEHEM WALKING TOUR

The locations below are all within a 2 square mile area. It is easily seen on foot with the possible exception of the Nisky Hill Cemetery.



Main Street – Downtown



(Left) The Moravian Star at historic Main and West Market Streets in Bethlehem. The street is lined with many restaurants and specialty shops.

While walking along West Market Street toward the Fritz home site, one passes the historic Moravian Burial Ground, God's Acre.

John Fritz Home Site (Redeveloped) and Neighborhood

John Fritz was AIME President in 1894 and General Superintendent and Chief Engineer for the Bethlehem Iron Company (Bethlehem Steel). He is considered to be the “Father of the US Iron and Steel Industry.” The Fritz Medal is awarded annually by AIME. He designed and donated Fritz Laboratory on the Lehigh campus. The site of his home at 145 East Market Street in Bethlehem has been redeveloped but many stately homes of the period remain in the neighborhood.

Nisky Hill Cemetery

The prestigious Nisky Hill Cemetery is the final resting place of many of the movers and shakers of the iron and zinc industries in the Lehigh Valley. Its location on the north bluff of the Lehigh River has an impressive view of the site of the Lehigh Zinc Works and the Bethlehem Steel furnaces on the south bank.



Samuel Wetherill invented the Wetherill Process for producing zinc oxide and built his first plant in Bethlehem in 1852.



Eugene Grace was President of Bethlehem Steel from 1916-1945 and Board Chairman until 1957. Grace was a Lehigh University graduate.



John Fritz was General Superintendent for the Bethlehem Iron Company (Bethlehem Steel). He was AIME President in 1894.



View of the Bethlehem Steel furnaces across the river from the gravesite of Eugene Grace.

Lehigh Valley Overlook (Bethlehem Public Library)

The terrace of the Bethlehem Public Library on Church Street provides an excellent view of South Bethlehem with the site of the Lehigh Zinc Company Smelter, the Bethlehem Steel Works, Lehigh University, and, during the Christmas season, the illuminated Star of Bethlehem.



View toward the Southside Historic District. The Bethlehem Steel Works and the site of the Lehigh Zinc Company Smelter are off the photo to the left.

Moravian Historic Sites

<https://historicbethlehem.org/about/historic-sites>

There are many Moravian historic buildings and other related sites in downtown Bethlehem. Guided and audio tours (fee) are available. The main campus of Moravian College is located about a half mile north of downtown.



Moravian Gemeinhaus (ca1741).



Moravian College, Downtown Campus.



Moravian Industrial Quarter.

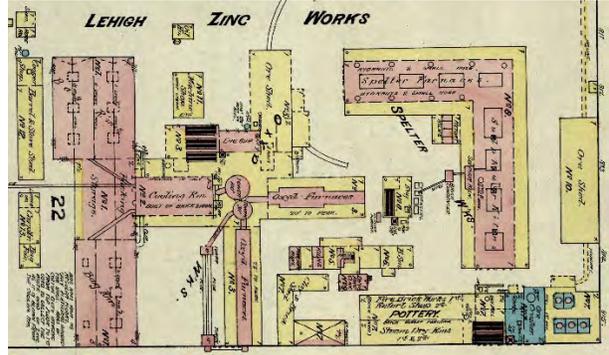


Moravian Historical Museum of Bethlehem.

**Lehigh Zinc Company Smelter Site, Columbia and Webster Streets
(Redeveloped; no original buildings remain)**



Historic view of the Lehigh Zinc and Iron Company. The Zinc Oxide Works' bag houses are the large buildings at the center of the photo. It was started by Samuel Wetherill. The smoke at the far left is from the Spelter Works started by Joseph Wharton.



An 1885 Sanborn Fire Insurance Map showing the Lehigh Zinc Company Smelter. The Zinc Oxide Works is at the center and left. The Spelter Works (zinc metal smelter) is at the right.

Bethlehem Steelworks Sites (Being redeveloped):

**“The Stacks” – Entertainment and Cultural Area and the...
1st Street and Founders Way.**



Four of the Bethlehem Steel blast furnaces now form the backdrop for the Steel Stacks events venue.



A view of the compressors inside the Blower Building. They supplied the air blast for the furnaces.

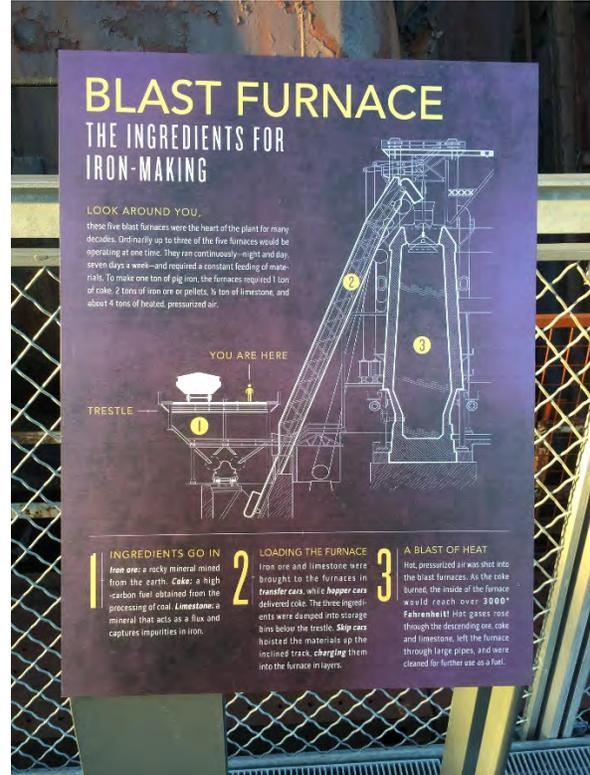
Hoover-Mason Trestle at The Stacks (Get a close-up view of Blast Furnace Row)
<http://www.hoovermason.com>



Walking the Hoover-Mason Trestle along Blast Furnace Row.



Blower Building below the trestle.



Interpretive sign on the Hoover-Mason Trestle.

National Museum of Industrial History
 602 East 2nd Street
<https://www.nmih.org>



(Left) The National Museum of Industrial History is located in one of the rehabilitated Bethlehem Steel buildings. It has extensive displays relating American industrial history and highlights the industries of the Bethlehem area. The museum entrance is shown with a restored steel plant locomotive. The Bethlehem Steel Office building is off the photo to the left. (NMIH photo)

Col. Edwin Drake Home (Repurposed, Private)

Wyandotte Street, Fountain Hill National Historic District



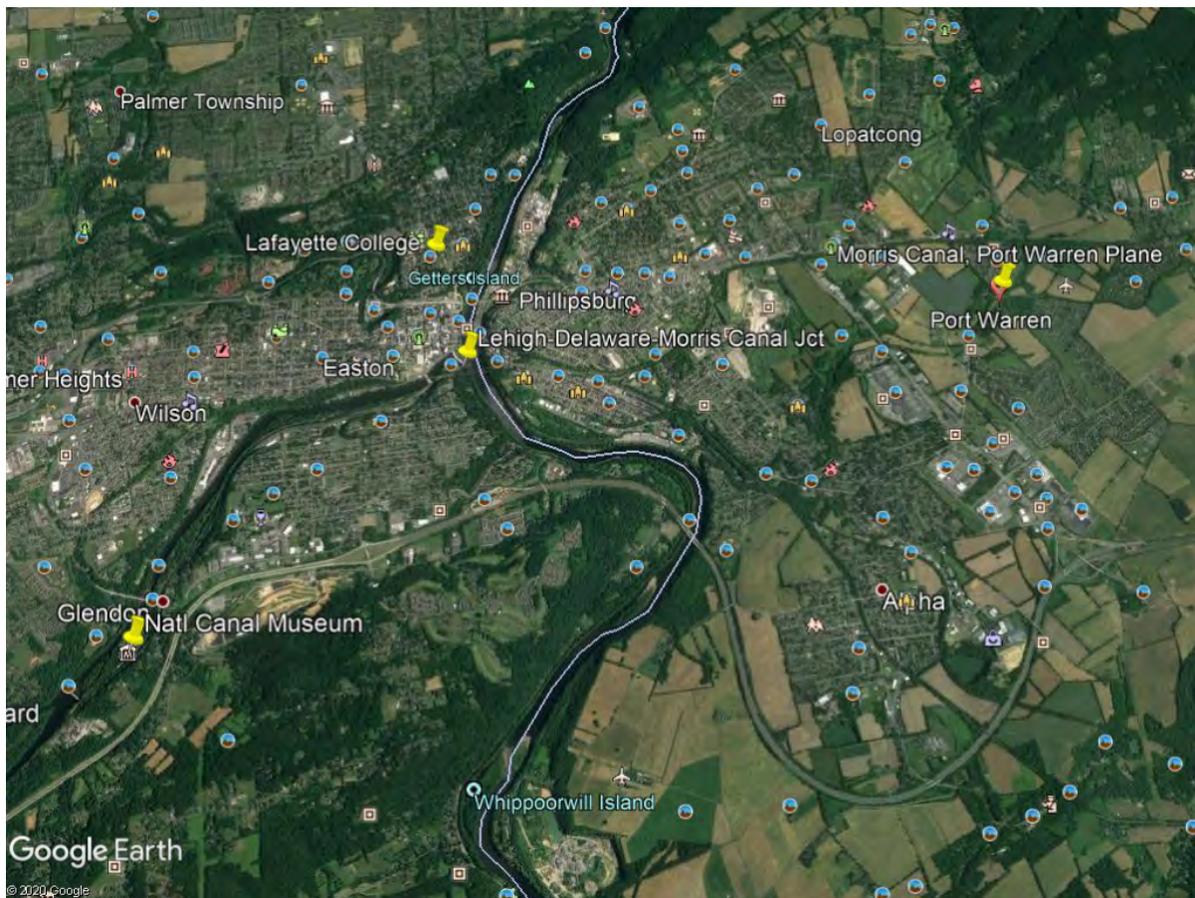
(Left) In his later years, Col. Edwin Drake, discover of oil in Titusville, PA, lived in the left of the two houses located in the Fountain Hill neighborhood. Now joined with the house next door and renovated, the building houses offices of the Episcopal Diocese of Bethlehem. (Wikipedia photo)

Lehigh University (See the separate walking tour)

EASTON – NATIONAL CANAL MUSEUM TOUR

Easton is located about 15 miles (20 min.) from the Hyatt Place Hotel. It was the transportation hub for the three canal systems that brought anthracite coal from the Pennsylvania mines to the markets in Philadelphia and New York City. The Lehigh Canal joined the Delaware Canal and the Morris Canal in Easton and neighboring Phillipsburg, NJ on the eastern side of the Delaware River. The Lehigh and Delaware canals with their locks and towpaths form the D&L Trail and the Delaware and Lehigh National Heritage Corridor. (<https://delawareandlehigh.org>) A portion of the Morris Canal running across New Jersey became the right of way for Interstate-80; however, several sections of the canal are preserved including Inclined Plane No. 9 at Port Warren, NJ, a short distance (5 miles and 10 minutes, each way) from Easton. The National Canal Museum is located in Hugh Moore Park on the Lehigh Canal in Easton.

Easton is also the home of Lafayette College, a private liberal arts college founded in 1826. It offers 37 BA degrees and 14 BS including 4 in engineering. Undergraduate enrollment is about 2700. Its arch rival is Lehigh University in Bethlehem.



Lafayette College, Easton, PA.

<https://www.lafayette.edu>



The Forks of the Delaware.

Easton junction of Three Canals that Carried Anthracite from Mines to Markets – Lehigh Canal from Jim Thorpe (Mauch Chunk), PA; Delaware Canal to Philadelphia; Morris Canal to New York City.



At the Forks of the Delaware the Lehigh River (left) joins the Delaware River (right) with Easton on the west bank and Phillipsburg, NJ on the right bank (out of the photo and across the bridge to the far right).



The Lehigh Canal connects with the Delaware Canal to Bristol/Philadelphia at Easton. The Delaware Canal State Park starts here. Canal boats bound for New York City crossed the Delaware River and entered the Morris Canal in Phillipsburg.

This location is an excellent jumping off point for the optional visit to the Morris Canal site in Port Warren, NJ, described below.

National Canal Museum, Hugh Moore Park, Easton (Tour and canal boat ride)
<https://canals.org>



Preserved Lehigh Canal Lock in the Hugh Moore Park, Easton, PA.



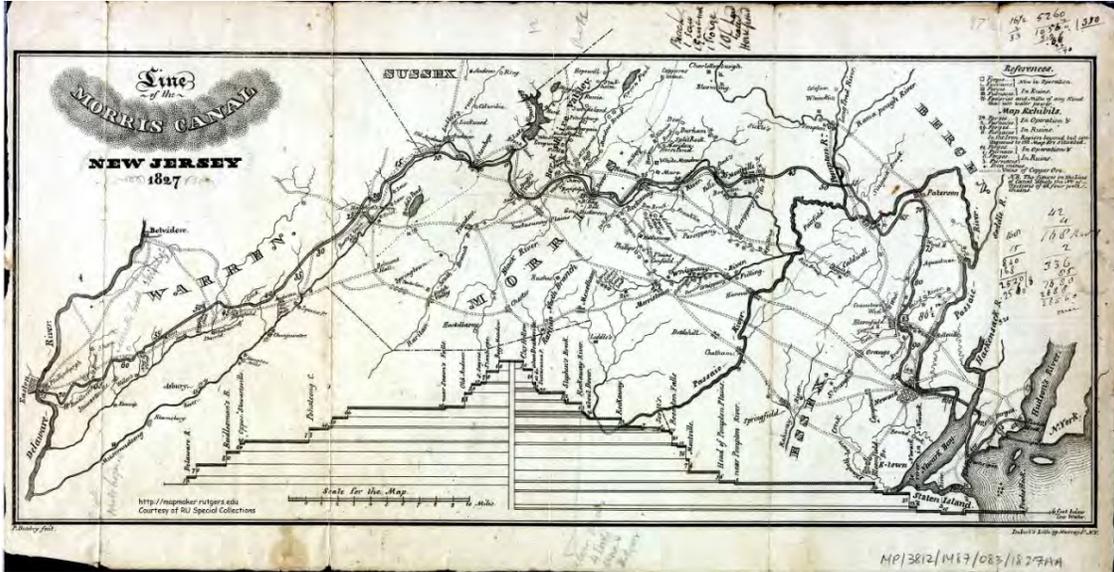
Replica of a canal passenger boat provides rides for visitors to the National Canal Museum.

By following a slightly different return route to Bethlehem, one can stop at the **Freemansburg, PA**, Delaware and Lehigh Trail access point and view one of the Lehigh Canal's locks and a locktender's house.



(Left) The lock and locktender's house in Freemansburg are part of a Canal Education Center (open occasionally).

(Optional) **The Morris Canal** (1824-1924) was used to transport anthracite coal to New York City. This amazing 102 mile-long example of canal engineering required 34 locks and 23 inclined planes to traverse the over 900' high topography of northern New Jersey. Near Port Warren, NJ, an inclined plane used to lift canal boats is preserved.



Morris Canal at bottom of Incline Plane 9, near Port Warren, NJ.



View down Incline Plane 9 from the Power House at the top.

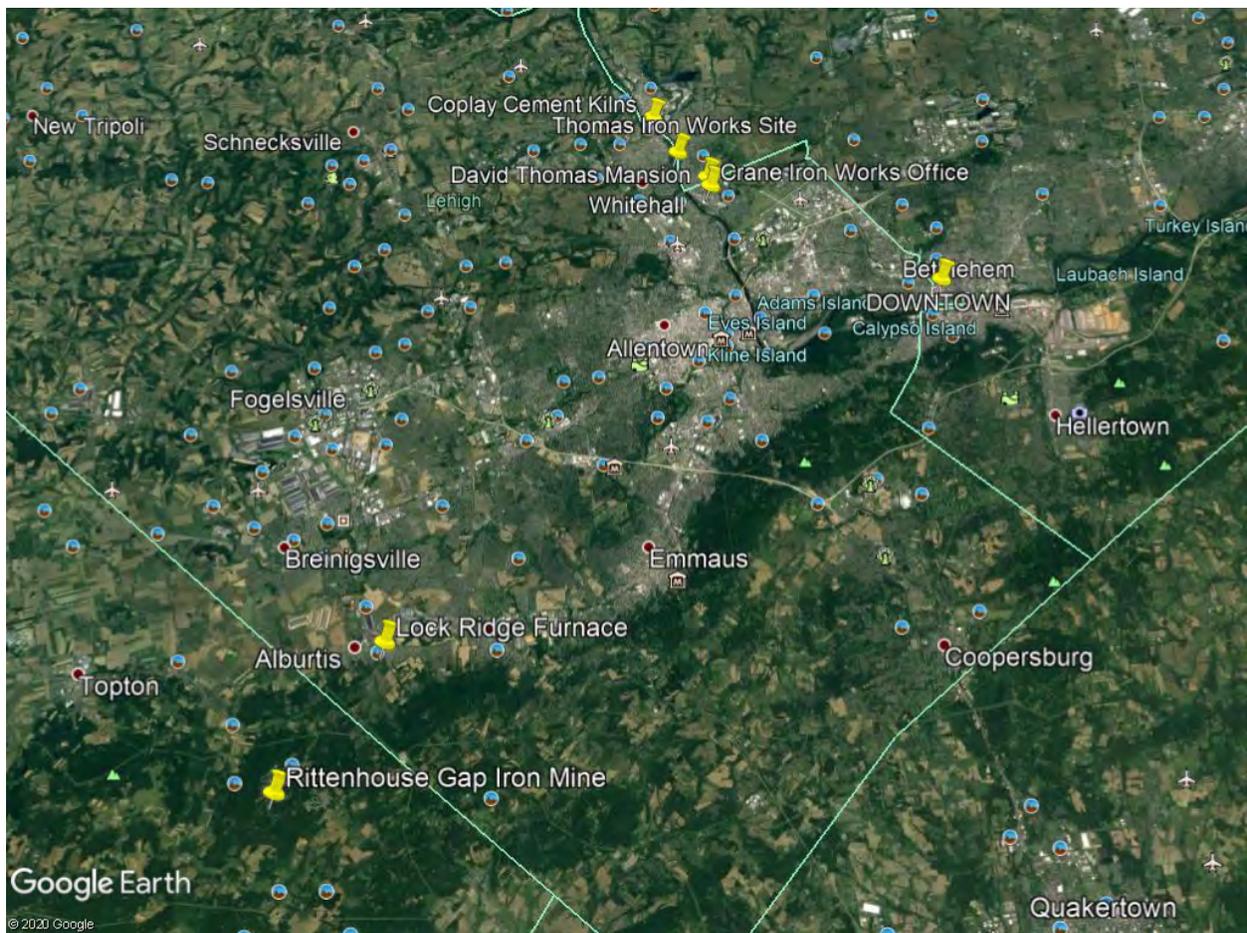


(Left) Historic view of Incline Plane 9 with the Morris Canal approaching it from the right and the Power House at the top in the distance. (Library of Congress)

CATASAUQUA AND ALBURTUS - DAVID THOMAS TOUR

Catasauqua, PA is located about 8 miles (13 min.) from the Hyatt Place Hotel. David Thomas, the father of the anthracite iron industry and first President of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), developed the Crane Iron Works and lived in Catasauqua. His Thomas Iron Works was located in nearby Hokendaugua, PA. All of the sites there can only be viewed from the road. The Thomas Iron Company operated the Lock Ridge Furnace at Alburto, PA. The site is well preserved with a museum also operated by the Lehigh County Historical Society.

David O. Saylor is the father of the American Portland Cement Industry. Using his 1861 patent, he built the vertical kilns in Coplay, PA (ca1866). The kilns are listed on the National Register of Historic Places. The Portland Cement Museum is located on-site is operated by the Lehigh County Historical Society.



Crane Iron Works Office (Private. The plant site has been redeveloped)



The Lehigh Crane Iron Works in Catasauqua, PA. In 1840, David Thomas built the first commercially successful U. S. iron works using anthracite coal. (Pennsylvania State Archives)



This repurposed building once was the Office of the Lehigh Crane Iron Works. (Google Earth photo)

David Thomas Mansion (Private)

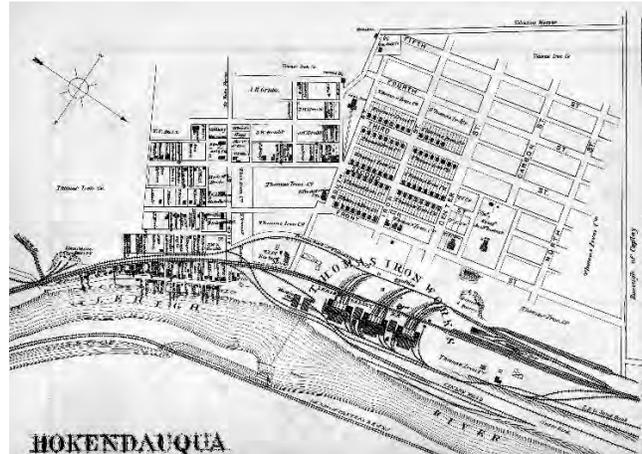


(Left) David Thomas built a mansion for his family in Catasauqua. After his death in 1882, his son took over management of Thomas' company and continued to live in the mansion. The mansion has been converted to apartments. (Google Earth photo)

Thomas Iron Works, Hokendaugua, PA (Abandoned site with few remains)



Thomas founded the Thomas Iron Company and built another works at Hokendaugua, PA, a few miles north of Catasaqua. His company eventually became part of the Bethlehem Iron Company which became Bethlehem Steel.



Adjacent to his iron works, Thomas built a company town for his workers. A railroad was built to Fogelsville, PA, to bring iron ore to the furnaces. Only a few traces of the abandoned iron works remain but the town is still active.

Coplay Cement Kilns, Saylor Park Cement Museum, Lehigh County Historical Society, Coplay, PA.

<http://www.lehighvalleyheritagemuseum.org/HistoricSites.htm>

<https://www.lehighcounty.org/Departments/Parks-And-Recreation/Our-Parks/Saylor-Park>



(Left) Nine vertical kilns from the Coplay Cement Company (ca1892-1904) have been preserved in the Saylor Park. David Saylor (1827-1884) was the father of the American Portland cement industry. The Saylor Park Cement Museum on-site is operated by the Lehigh County Historical Society.

Thomas Iron Company-Lock Ridge Iron Furnace Museum, Lehigh County Historical Society, Alburton, PA.

<http://www.lehighvalleyheritagemuseum.org/HistoricSites.htm>

<https://www.lehighcounty.org/Departments/Parks-And-Recreation/Our-Parks/Lock-Ridge-Park>



(Left) The furnace complex of several buildings has been preserved in a heritage park. The museum is operated by the Lehigh County Historical Society.

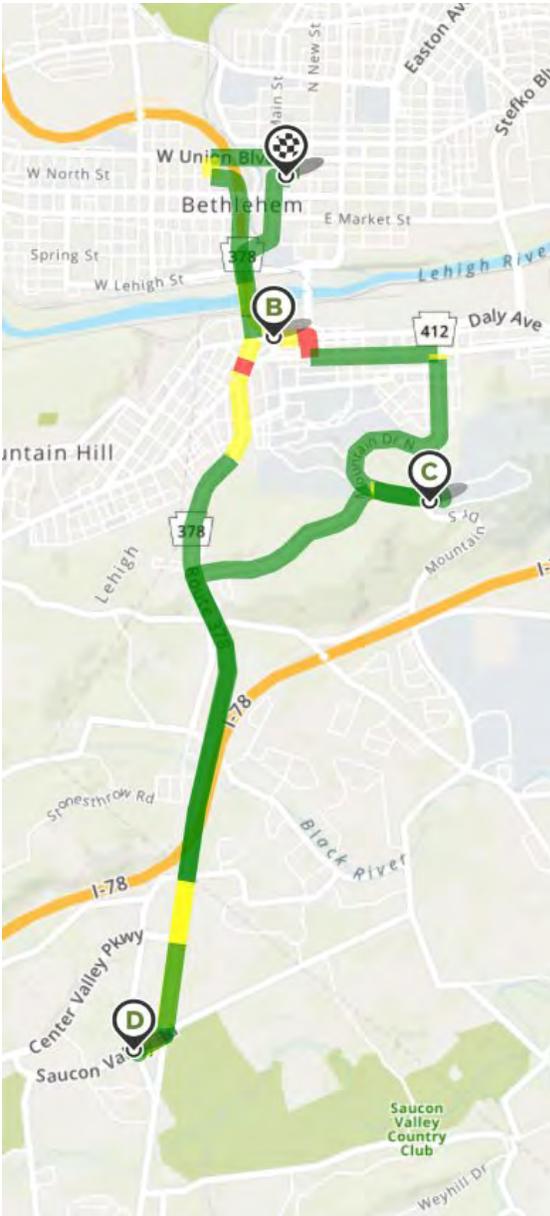
Ore for the furnaces came from the Rittenhouse Gap Mine and others in the area.

Tour Note: If you missed it, it is possible to visit the **FRIEDENSVILLE ZINC MINING DISTRICT** with only a small detour on the return to Bethlehem.

Highway Route Maps (from Mapquest.com)

LEHIGH UNIVERSITY AND SOUTHSIDE HISTORIC DISTRICT (B); IACOCCA CENTER (C); AND FRIEDENSVILLE ZINC MINING DISTRICT (D) TOURS MAP

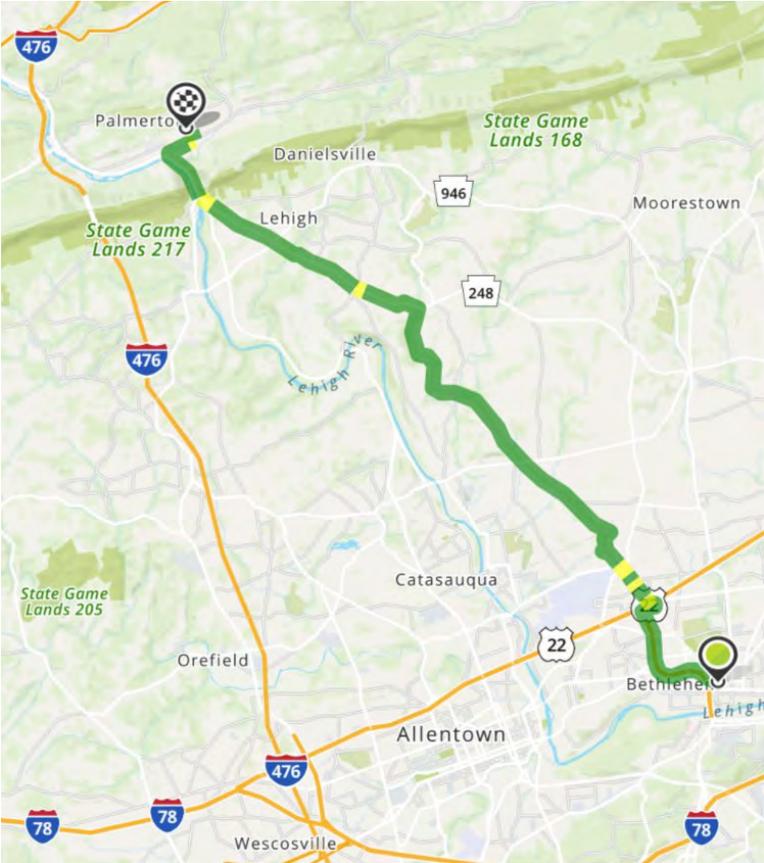
Hyatt Place, Bethlehem (START); Southside Historic District and Lehigh University (B); Lehigh University, Iacocca Center (C); Friedensville Mining District (D); Return to Iacocca Center (C) or directly to Hyatt Place, Bethlehem (END)



NOTE: Colored highway sections reflect traffic conditions at the time the maps were printed. Conditions (colors) will vary with traffic volumes.

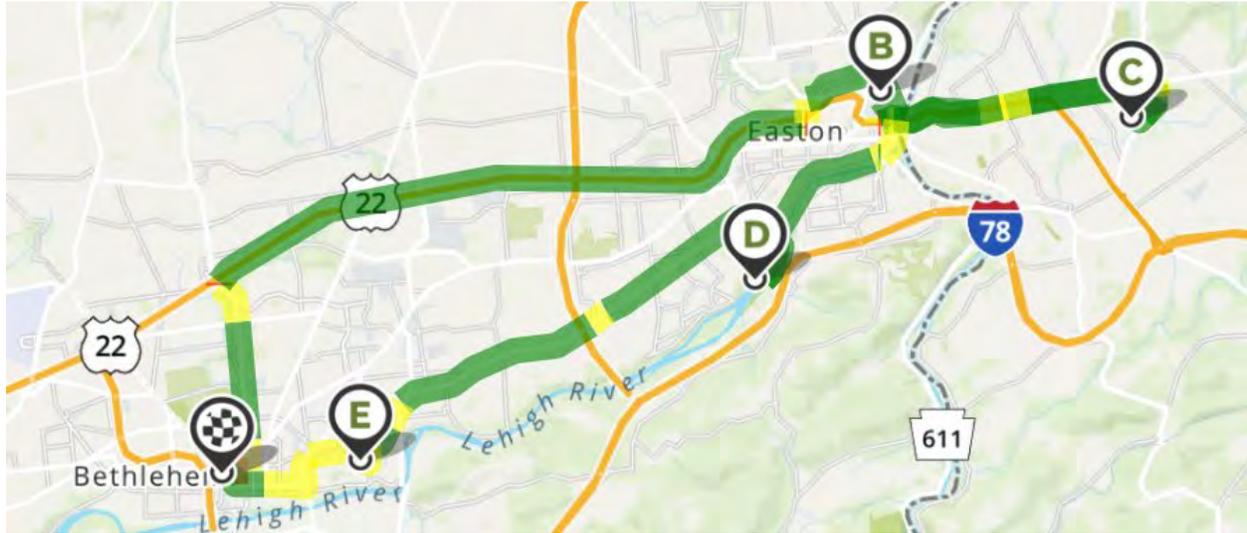
PALMERTON, “ZINC CITY,” TOUR MAP

Hyatt Place, Bethlehem (START); Palmerton; return to Hyatt Place, Bethlehem (END)



EASTON – NATIONAL CANAL MUSEUM TOUR MAP

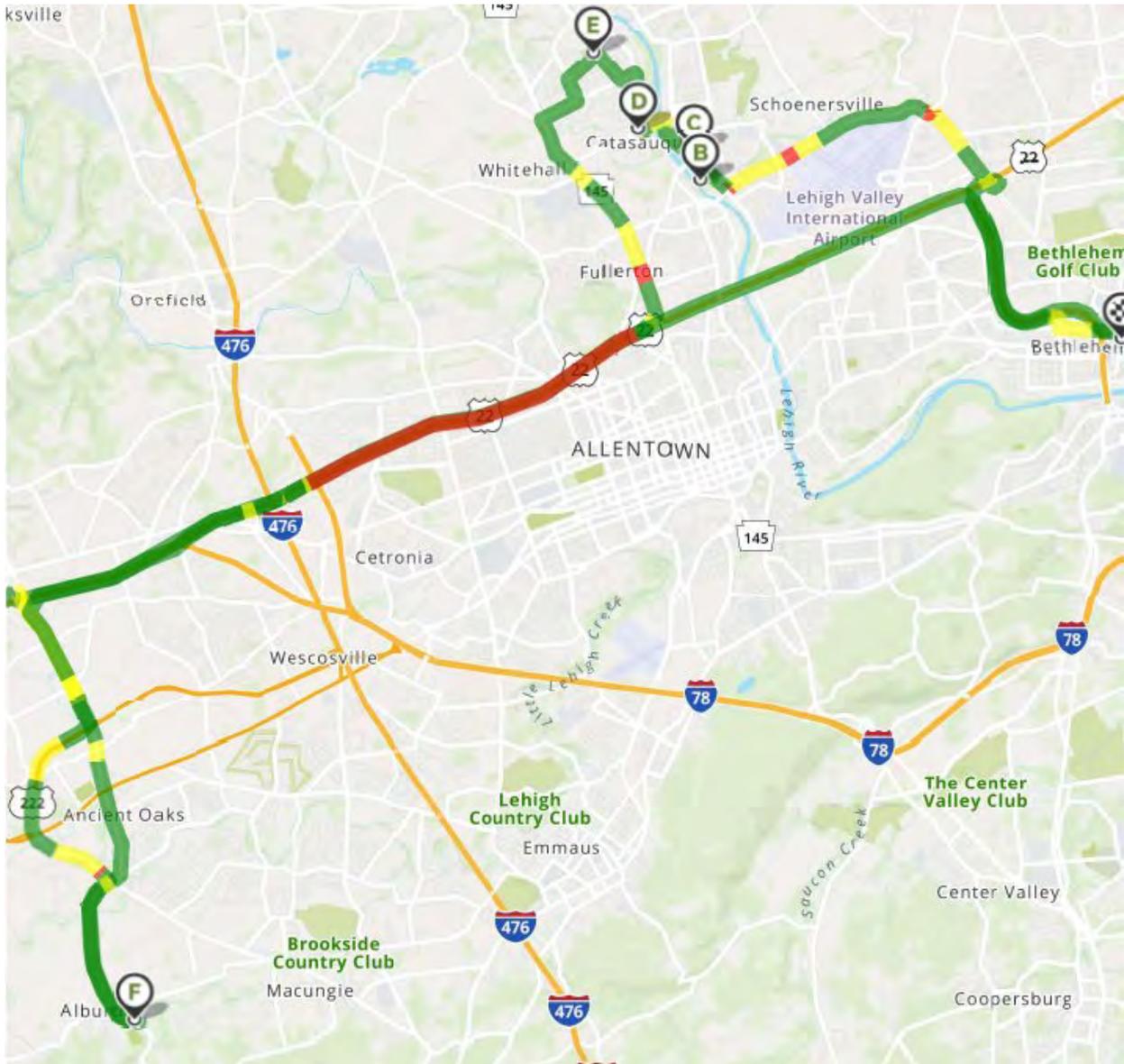
Hyatt Place, Bethlehem (START); Lafayette College, Easton (B); Morris Canal (C); Junction of 3 Canals at the Forks of the Delaware (Park at River Junction); National Canal Museum (D); Lehigh Canal, Freemansburg (E); Hyatt Place, Bethlehem (END)



Note: The optional tour route from downtown Easton to the Morris Canal in Port Warren, NJ uses the Route 22 bridge from Easton to Phillipsburg.

CATASAUQUA AND ALBURTUS - DAVID THOMAS TOUR MAP

Hyatt Place, Bethlehem (START); Crane Iron Works Site, Catasauqua (B); Thomas Home, Catasauqua (C); Thomas Iron Works Site, Hokendaugua (D); Cement Kilns, Coplay (E); Lock Ridge Iron Works, Alburtis (F); Hyatt Place, Bethlehem (END)



Version 3
Compiled by L. Michael Kaas with lm2 edits
6/16/2021