

Hahn Arroyo/Paseo del Nordeste



The Hahn Arroyo segment of the Paseo del Nordeste Trail is a quiet, three mile long path which follows a concrete lined channel through suburban neighborhoods. Although the route is short, there is much to see and discuss as we ride. The arroyo was named after a businessman who also gave his name to a small settlement north of Albuquerque, at the mouth of the arroyo. We will look at the man and explore the mystery of his relationship to that settlement. Along the way, we will also examine some of the details of how the city's storm drain system works. This network of channels is designed to save lives and protect property but most of us pay it little attention until it is needed in a flood. Outdoor art—both public and private—is found throughout Albuquerque and we will look at examples of both. Finally, we'll visit a branch of our public library system and talk about its namesake.

Going west is easy, as the moderately sloped path descends steadily to its junction with the North Diversion Channel Trail. Total elevation loss, (or gain if you're riding west to east), is about 300 feet.

Those riding back up should leave more time for the return trip.

Although the trail is on a dedicated right of way, it crosses many roads. Several intersections with quiet streets have poor views of cross traffic, so be sure to obey stop signs and look both ways before proceeding. The busy arterials have protected medians, allowing cyclists to cross one set of lanes at a time.

For those who wish to drive to the trail, parking at the east end is available in the City/Albuquerque Public School parking lot adjacent to Sandia High School, just east of Pennsylvania Street and the trailhead. Enter the lot from Dellwood Road which is on the north side of the school. The lot has locking gates and does not list hours of operation. If in doubt, there is plenty of parking on the south side of Dellwood just east of Pennsylvania. However, there's no parking on this stretch of Dellwood from 7 AM to 3 PM weekdays.

The west end has no formal public parking. Further, the trail's junction with the North Diversion Channel is inaccessible from the street. Just below the junction is a small city park with no public parking but nearby street side parking is available on Lafayette Drive. If you use this option, you can access the trail by riding east on Delmar Avenue for two blocks and then turning north on the short



Shade, tables & chairs - Parking area north of Sandia High School

paved drainage that takes you right to the path. Delmar Avenue is one long block north of Candelaria Road and Lafayette Drive is three blocks west of Carlisle Boulevard.

Parking is available curbside at Montgomery Park and also in the parking lot for Erna Fergusson Library. Both of these locations are about midway between the two end points.

City buses carry bike racks and with careful planning they can get you to the trail and then home. The #13 on Comanche Road and the #7 on Candelaria Road, both commuter routes with limited schedules, can bring you to bus stops on Pennsylvania Street near the east end of the trail. From either bus stop, you have less than 1/2 mile ride along Pennsylvania's bike lanes to the trailhead. The #5 on Carlisle Boulevard will get you close to the west end. For more details see the city's bus information at <http://www.cabq.gov/transit/bus-routes-and-schedules>.

**0.0 /3.1
Miles**

To reach the east end of the trail by bicycle, use Pennsylvania Street which has bike lanes and connects with many bikeways to the north, south and east. To reach the west end of the Hahn Arroyo, use the North Diversion Channel Trail/Paseo del Nordeste. The Hahn Arroyo trail turns east from the North Diversion Channel about 0.4 miles north of Comanche Road and about 0.3 miles south of Montgomery Boulevard. For more details, see the city's bikeway map: <http://www.cabq.gov/parksandrecreation/recreation/bike/bike-map>.

Junction of Hahn Arroyo and Pennsylvania Street.

The start of the trail is signed on the west side of Pennsylvania Street and is 0.2 miles north of Candelaria Road and 0.2 miles south of Comanche Road. The sign at the start of the trail notes you are entering Paseo del Nordeste Trail. This is an extension of the Paseo del Nordeste Trail that includes part of the North Diversion Channel (NDC) trail. We treat the entire NDC as a separate tour.

Hahn Arroyo was built in the 1970's by the Albuquerque Metropolitan Arroyo Flood Control Authority, (AMAFCA). AMAFCA is a political subdivision of the State of New Mexico, created by the state legislature in 1963. Its purpose is to provide flood control for the greater Albuquerque area by building and maintaining flood control structures. The Authority is governed by



Looking east – The trailhead and Sandia High are on the right



Hahn was located near what is now the northwest corner of Griegos Rd. & Edith Blvd.

an elected board.

Concrete-lined Hahn Arroyo begins just a few blocks east of Pennsylvania Street where drainage from Dellwood Avenue empties into the channel. Determining where to allow drainage to flow through streets and where to require a separate channel involves balancing at least two factors: On the one hand, the private home developer wishes to maximize the available land for house construction. On the other hand, the City and AMAFCA want to ensure flood waters are carried away safely.

The Place Names of New Mexico by Robert Julyan notes that the Hahn drainage was named after a small settlement and trading point located at the mouth of the arroyo. It was established around 1910 by William H. Hahn. The location was also a railroad stop, built in 1909 four miles north of Albuquerque. Besides the station, the village of Hahn had additional railroad facilities. Historically, Hahn was where single track ended and double track began as trains headed south into Albuquerque. In the adjacent 1990 United States Geological Survey map, Hahn Arroyo can be seen entering from the east. As we'll see, most of the Hahn's water is now intercepted by the North Diversion Channel.

W. H. Hahn was a merchant who sold coal from his commercial yards in downtown Albuquerque and Santa Fe. He was also part owner of the Madrid mines, source of his coal. For a time, he served as vice president of American Lumber Company which was, along with the railroad, one of the largest employers in early Anglo Albuquerque. For a brief period he



Office staff, W. H. Hahn Coal Co., ca.1900

owned a Cadillac dealership. Around 1917, Hahn moved to Los Angeles. Somewhat surprisingly, we know little about why he started the village that bears his name and what kind of business he ran there. The former settlement is now covered with industrial development.

**0.5/2.6
Miles**

Just east of Louisiana Boulevard.

The structure extending upward from the floor of the channel is a flow gauge installed by the United States Geological Survey (USGS) in 1978. It is not currently in use. A more modern apparatus has been



placed in Hahn Arroyo just east of Monroe Street, on the north side of the channel. The newer gauge records water depth and flow rate and is capable of transmitting data by satellite, allowing the USGS to observe flows in real time.

Unfortunately, data from the Hahn gauge are not available on the USGS real time website,

Water Watch, (<http://waterwatch.usgs.gov/?m=real&w=map&r=nm>), which tracks stream flow across the state and the country. The USGS has installed a rain gauge upstream in the Hahn watershed, allowing the agency to build a model of how rainfall and runoff interact. This information can then be used to aid in the design and modification of this and other arroyos. Todd Kelley of the USGS noted that record flow in Hahn occurred in June, 1999, when the water level reached five feet and was close to overflowing its channel. Flow rate at that time was 6230 cubic feet per second. Consistent with the isolated nature of our thunderstorms, Todd noted that this record flow was a localized event, with no other measured sites reaching record flow.

Besides measuring water flow, the gauge contains equipment to measure water quality. The United States Environmental Protection Agency, (EPA), requires the city to monitor water flowing into the Rio Grande and ensure that it meets certain purity standards.

**0.6/2.5
Miles**

Louisiana Boulevard.

A protected median allows safe crossing of Louisiana Boulevard.

**1.0/2.1
Miles**

California Street.

A sign here explains the rehabilitation project undertaken on the stretch of Hahn Arroyo from California Street to Comanche Road. Note the walking path on the north side of the channel which is also part of the work.

The project, completed in December 2011, was the result of collaboration between AMAFCA and the City of Albuquerque. Over many years, the channel had deteriorated and was in need of reconstruction. While planning for the work, AMAFCA, city administrators, planners, public arts people and politicians all contributed to a vision of the renovated arroyo that included art, planting of vegetation, rest stops, a walking path on the north side and other amenities.



The tile work you see here is unusual. Referred to as litho-mosaic art, the tiles are glued to a mesh backing and installed by a contractor on site. In the litho-mosaic process, the artist works indoors, arranging and securing tiles and then a construction crew handles the outdoor installation of the completed mosaic. Much of the design and layout was done by community members, including many children. Working through the Harwood Art Center, participants first identified living things seen in and around New Mexico's ditches. Next, they made drawings, enlarged them, and used them as patterns for laying tiles.



Fish mosaic near San Pedro Drive

Unique to this public art installation was the broad base of community participation. Everyone was invited to contribute. The result was strong buy-in from the surrounding neighborhoods, a feeling of ownership and the creation of an attractive public space that invites use. You can see the full story here: <http://vimeo.com/43425354>.

Another unusual feature of the rehabilitation project is the variety of means used to water the vegetation. Note the small depressions in the dirt which have been excavated near the path. These low spots catch water runoff. Additional water

comes from city wells. Periodically, the city's drinking water wells must be shut down for maintenance and during periods without pumping, these wells accumulate sediment. When the pumps are re-started this sediment-laden water must be cleared out before the well water can be used for drinking. Rather than waste this undrinkable



Just off the trail – Aztec Road near California Street

water, the city pipes it into Hahn arroyo, where it is drained into another pipe system ending in a cistern near Montgomery Park, just ahead along the trail. From the cistern, the water is redistributed to the vegetation. The intake for this distribution system can be seen on the arroyo floor just upstream from the large steel filtering structure west of San Pedro Drive.

To see the sculpture of the two reptiles, go south on California Street to Kiowa Avenue. At Kiowa, California becomes Aztec Road. Ride one half of a block south on Aztec and look for the sculpture in the front yard on the right.

**1.1/2.0
Miles**

San Pedro Drive.

This intersection has more tiles and landscaping as well as a bicycle air pump, courtesy of AMAFCA. Benches and a pavilion provide rest and shade.



June, 2013 Flood – Looking west from San Pedro Drive. Note the standing wave.

The adjacent City photo shows a torrent of water in the arroyo just west of San Pedro Drive. This occurred during a 2013 rainstorm. While most of us look at flooding as a fascinating and fearful event, flood control engineers take a more dispassionate approach, methodically examining the technical features of fast moving water in order to minimize its damage. A few of these features are worth discussing here. To start, imagine throwing a pebble into a quiet pond. Circular waves traveling at a certain



Steel filtering structure - June, 2013 flood

speed spread out from the pebble. Now imagine throwing a pebble into a moving stream. If the stream flow is slower than the speed at which the waves spread from the pebble, these waves will continue to spread downstream and upstream, albeit more slowly upstream. But if stream flow moves faster than the pebble’s waves, the waves will spread downstream only. Stream flow which moves slower than the speed of its waves is said to be subcritical while water moving faster is said to be supercritical. Water at supercritical flow has substantially more energy than subcritical flow.

Further, when the flow slows from super- to subcritical, (a change referred to as a “hydraulic jump”), a good deal of this energy is released. This dissipated energy is expressed through turbulence, rapids and increased water height. A standing wave--as shown in the foreground of the photo on the previous page--is another manifestation of a hydraulic jump. The released energy has destructive power which must be managed in order to minimize damage to property. For those who want more details as well as some impressive photos of hydraulic jumps, see Wikipedia, http://en.wikipedia.org/wiki/Hydraulic_jump.

Just west of San Pedro Drive, note the large steel filtering structure and the sign explaining its function. The filter was designed by AMAFCA and modeled at the University of New Mexico Hydrology Lab. It was created to balance two potentially conflicting requirements issued by two different federal agencies. On the one hand, the federal Environmental Protection Agency requires that storm water entering a river be scrubbed clean of pollutants. On the other hand, the Army Corps of Engineers discourages barriers in waterways as these may hinder smooth flow. The adjacent City photo shows the structure during the 2013 flood.

Just east of the steel structure and located on the floor of the arroyo is the intake for the recycled water mentioned earlier.

**1.4/1.7
Miles**

Comanche Road.

Crossing Comanche Road, you enter Montgomery Park. This is a spacious facility with grass, trees, swings, playing fields, and tennis courts. Parking is available on the east side of the park off Comanche Road--just east of where the trail crosses Comanche. Curbside parking



Erna Fergusson Branch Library

is available on the residential streets bordering Montgomery Park. Adjacent to the park is the city's Palo Duro Senior Center and municipal pool. The park is named for the Montgomery family, who in 1909 homesteaded land near what is now the intersection of Montgomery and Carlisle Boulevards.

**1.7/1.4
Miles**

San Mateo Boulevard.

In the southeast corner of the intersection of Hahn Arroyo and San Mateo Boulevard is the Erna Fergusson branch of the Albuquerque/Bernalillo County Public Library. The busy library offers parking, rest rooms, drinking water, and a quiet place to rest as well as books, periodicals, computers and helpful librarians.



Erna Fergusson

Erna Fergusson, (1888-1964), was a teacher, a travel guide and an author. She was the daughter of Harvey Fergusson, prominent lawyer, territorial delegate, and after statehood, United States Representative. Her grandfather was Franz Huning who settled in Albuquerque in the mid-nineteenth century and through his businesses, became a wealthy, widely respected citizen. Erna traveled the southwest and later Latin America, publishing many articles and books about her experiences. She also wrote extensively about the history and current affairs of Albuquerque and New Mexico. Her best-known work, *Dancing Gods: Indian Ceremonials In New Mexico and Arizona*, was published in 1931. Her writings played a significant role in popularizing southwestern culture throughout the United States. Interestingly, she was an early advocate of conservation, decrying the slaughter of

buffalo, overgrazing, destructive development, and the logging of the Bosque. A brief biography of her by David A. Remley can be found at this and several other library branches.

The east and south sides of the library, adjacent walkways and the nearby San Mateo traffic median are all sites of a public art installation titled, "Alphabet Soup." Pete Beeman, the creator of the art noted that letters are the building blocks of our language, of our learning and of our civilization and in his installation they swarm out of the library into our lives. Pete is a Portland-based artist who has done other large-scale public art projects, many of them quite delightful. You can see photos of some of his



**Alphabet Soup sculpture,
San Mateo median**

other work here: <http://www.petebeeman.com/Projects/ProjectPublic.html>.

1.9/1.2
Miles

Just east of Monroe Street.

The USGS flow gauge mentioned earlier is on the arroyo's north wall. Note the transmitting equipment.

2.2/0.9
Miles

Washington Street.

Traveling from west to east, Washington Street is the first of the "president streets," a series which ends at Truman St., just west of San Mateo Boulevard. However, before July 1, 1952, streets named after presidents were scattered all around the city. Albuquerque city government chose the July date to rename approximately 650 streets and also to institute our four-quadrant grid system, (NE, NW, SE, and SW). This massive undertaking was deemed necessary because earlier street naming had been uncoordinated, as many builders created widely scattered housing developments in the Northeast Heights. In her book, *Atrisco To Zena Lona – A Snappy Survey Of Selected Albuquerque Street Names*, Judy Nickell provided many details of this re-naming and noted that this was the biggest street name change in U. S. history.

2.7/0.4
Miles

Carlisle Boulevard.

Note the ramp in the arroyo just east of Carlisle Boulevard. The increased grade accelerates the flow of



water, ensuring it will pass quickly under the bridge. West of Carlisle Boulevard, the channel deepens, reflecting the natural down-cutting of the arroyo. Flood waters are moving rapidly here and the arroyo's high walls prevent splashing.

AMAFCA has installed large fins along the walls of the arroyo just before it joins the North Diversion Channel. These fins slow the water and prevent it from flowing out of the arroyo as the channel curves northward.

3.1/0.0
Miles

Junction with the North Diversion Channel.

Luecking Park is to the south and below the trail. There are picnic tables, swings, and shade. Streetside parking is available.

The Hahn Arroyo is one of many drainages flowing westward out of the Sandia Mountains and down into the Rio Grande Valley. Along with most of the other arroyos draining the mountains' west escarpment, the Hahn is now intercepted by the North Diversion Channel east of the valley floor. Historically, flooding from these west-flowing channels wreaked havoc in the lowlands of the valley, including downtown. Flooding was eventually controlled in two ways. First, control structures such as dams and impoundments were built into the individual arroyos. Second and very importantly, the North Diversion Channel was constructed to intercept the west-flowing channels and divert their waters into the river at a point well to the north of Albuquerque. For a detailed look at the controversy surrounding the construction of the NDC and the conflict's fascinating resolution, see the bike tour for the North Diversion Channel Trail.

This is the end of the tour., though if you could see it past the berm along the North Diversion Channel and Interstate-25, you might see the depression of the Hahn Arroyo leading down the hill to Hahn, near the tracks.



A service vehicle was caught in the North Diversion Channel during the flood of 2013

If you have time, consider exploring some of the trail along the North Diversion Channel since you are right there.

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Thanks to those who helped: Kevin Daggett; Vern Glover; Mary Huber; Todd Kelley; Eileen O Connell and staff of the Special Collections Branch, Albuquerque/Bernalillo County Library; Mo Palmer; Joe Sabatini; Janet Saiers; Diane Shaller and Historic Albuquerque; George Sieber; The Staff of the UNM Center for Southwest Research; Mark Stone; Kurt Wagner; Mary Wyant and staff of the UNM Centennial Library Map Room. Written by Marshall Kovitz, and updated April 26, 2020.