1. NAME OF PROPERTY

Historic Name: LEAP-THE-DIPS

Other Name/Site Number: N/A

2. LOCATION

Street & Number: 700 Park Avenue Not for publication: N/A

City/Town: Altoona Vicinity: N/A

State: PA County: Blair Code: 013 Zip Code: 16602

3. CLASSIFICATION

Ownership of Property		Category of Property	
Private:	___	Building(s):	___
Public-Local:	X	District:	___
Public-State:	___	Site:	___
Public-Federal:	___	Structure:	X
		Object:	___

Number of Resources within Property

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
1	_____	structures
_____	_____	objects
1	0	Total

Number of Contributing Resources Previously Listed in the National Register: 1

Name of Related Multiple Property Listing: N/A

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

Signature of Certifying Official Date

State or Federal Agency and Bureau

In my opinion, the property ____ meets ____ does not meet the National Register criteria.

Signature of Commenting or Other Official Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

___ Entered in the National Register
___ Determined eligible for the National Register
___ Determined not eligible for the National Register
___ Removed from the National Register
___ Other (explain):

Signature of Keeper Date of Action

6. FUNCTION OR USE

Historic: RECREATION & CULTURE Sub: Fair

Current: RECREATION & CULTURE Sub: Fair

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: N/A

MATERIALS: Wood
Foundation:
Walls:
Roof:
Other:

Describe Present and Historic Physical Appearance.

Leap-the-Dips is a Side-Friction Figure Eight roller coaster constructed in 1902 by E. Joy Morris of Philadelphia, Pennsylvania. The roller coaster is located in Lakemont Park in Altoona, Pennsylvania. Lakemont Park was originally developed by the Altoona and Logan Valley Electric Railway Company in the 1890's. The roller coaster and its components occupy roughly a rectangular area measuring 84 feet by 229 feet. The resource consists of the figure eight course of track mounted on a wood trestle support structure, a station pavilion, a small storage shed for the coaster cars, a small shed housing the chain motor, and the individual 2-seat cars.

The site of the ride is currently flat. Early photographs of the ride show a wide swale beneath the ride which was apparently filled in at some point and the lengths of the trestle uprights shortened accordingly. Early photographs also indicate that a section of tangent track leading from the final curve to the station originally contained one small dip which was later replaced by two small dips. These two differences are clearly evident in the attached copy of a photograph of the coaster found in the illustrated booklet, *Lakemont Park* (see bibliography). The date of the photograph and the date of publication of the booklet are not known; however, the booklet contains a listing of railroad excursion fares to the park for the 1902 season, and this listing is referenced in the text. It is presumed that the booklet was published in 1902 or shortly thereafter. In addition, the lowest dip in the middle of the figure eight was deepened slightly to extend it all the way to the ground. These changes have been confirmed by Mr. Richard Roesch.[1] There are no known records as to when or why these changes were made; most information has been handed down by word of mouth, and those directly involved are no longer living.

Except for certain minor changes to construction materials as noted below, all other primary characteristics of the ride are essentially unchanged from the original construction. Leap-the-Dips is an excellent example of the once common Side-Friction Figure Eight roller coaster retaining all of the significant characteristics and details typical of the hundreds of such rides constructed during the first two decades of the twentieth century.

The dominate feature of the resource is the figure eight course of track and the structure on which it is supported. The track's rails consist of a pair of flat longitudinal boards laid parallel to support the weight-bearing non-flanged wheels of the cars and a pair of flat friction boards positioned vertically on each side of the track, which are contacted by separate non-flanged guide wheels mounted vertically on the sides of the cars. Both pairs of boards have thin strips of steel mounted on their surface to provide a hard wearing low-

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[1] Mr. Richard Roesch came to Lakemont Park in the 1940's and became a manager. When he first came to the park he worked with those who had been with the park from the early years and had described the two changes in the profile.

friction surface for the cars' wheels.[2] The rails are mounted on a trestle support structure. Each bent of the trestle structure consists of a pair of upright timbers connected by one or more cross ledger boards which support the rails.[3] Between the bents additional intermediate ties maintain the gauge of the track and provide additional support for the friction boards.[4] The bents are connected to each other by diagonal wood bracing.

Leaving the station, the track makes a left turn and descends a short section of tangent track. It then climbs an inclined lift hill to a height of 41 feet which is the highest point on the course of track. A two-stage electrically driven chain hoist pulls the cars to this high point. Originally made of malleable iron, the chain and associated gears are now made of steel. The change from malleable iron to steel occurred in the early 1980s to satisfy insurance requirements. A series of hinged wooden paddles mounted horizontally on each side of the track on the lift hill act as ratchets to prevent the cars from slipping backward down the hill in the event that the chain should break or fail. At the summit of the lift hill the track passes beneath a small peaked, steeple-like roof which extends the total height of the structure to 54 feet.

From the summit the track dips slightly and then follows a gradually descending profile through a series of large radius curves arranged in a series of two and one-half figure eights forming a multi-layered course with the track occupying different levels within the same structure. The width of the figure eight structure measures 84 feet at its widest, and 192 feet from front to back. Where the track passes under itself at the crossings of the figure eights, the profile is broken by a slight dip in the track. After the last curve the track returns to the station over a tangent section containing two small dips. The final 60 feet of this tangent track contains a friction brake for slowing the cars and is covered by a roof measuring 10 feet in width, the purpose of the roof being to keep the brakes dry. The track makes a left turn as it enters the station.

The station consists of an open pavilion at the front of the ride. The rectangular pavilion, measuring 70 feet wide by 37 feet deep, is constructed of wood and is covered by a shingled, steeply pitched hip roof. The front of the station has a low wood platform with benches where passengers can gather and wait for the cars. Behind this low platform is a raised boarding platform reached by steps. The track is behind the boarding platform. Another low platform area behind the track provides space for the ride's operators. A hand-operated friction brake stops the cars as they enter the station.

Extending from the rear of the station at an acute angle is a wooden shed measuring 60 feet long by 21 feet wide. This shed is used for the storage of the cars. The shed consists of a series of adjacent stalls each measuring 9 feet wide by 21 feet deep and a transfer track

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2 Originally the wheels rode directly on wood. The bottom rails were made of sugar maple. The friction boards, originally long leaf pine, were mostly replaced with plywood during the 1950s and 60s as part of routine wood replacement. The steel was added in high stress areas to eliminate wear and tear on the wood and the need for frequent wood replacement. The steel on the bottom rails was added in the dips prior to 1953. The steel was added to the friction boards in the 1950s and 60s.

3 The uprights originally rested on wooden sills placed on the ground. Beginning in the early 1980s, the sills were replaced by concrete slabs for better durability and to eliminate contact between the wooden uprights and the ground.

4 The intermediates were originally wood. Many of these were replaced with steel in the late 1960s for greater durability and ease of construction as the wooden intermediates used mortise and tenon construction.

running the length of the shed past the open fronts of the stalls. A small, movable platform containing a short section of track is mounted on the transfer track and can be pushed between the main track in the station and any of the individual stalls.

A small wooden shed measuring 18 feet by 19 feet is located near the base of the lift hill of the main structure and houses the motor which drives the lift hill chain hoist.

The sleigh-like cars are constructed of wood and contain two upholstered seats each wide enough to seat two adults. Each car rests on four non-flanged steel wheels mounted beneath the cars. Two non-flanged steel wheels are mounted vertically on each side of the car for steering the car on the course.

With the side friction figure eight coaster having been obsolete since the beginning of the 1920s, Leap-the-Dips operated for more than six decades during which changes to the economics and availability of labor and materials occurred. As operating machines, wooden roller coasters need frequent maintenance and replacement of materials. Most of the modifications to Leap-the-Dips were made in response to normal maintenance requirements and the changing character of labor and material costs and availability. The noted changes to the small dips are not considered significant. Photos of other figure eights from the period before 1920 indicate small variations in the profile of the final track run including two small dips on some rides. Of the changes in materials, only the addition of steel on the running rails had any effect on the ride operation by reducing frictional losses which resulted in faster running cars. Current plans for restoration of the ride call for the use of wooden intermediate ties and no steel on the running rails.

Aside from changes related primarily to the track as noted, most of Leap-the-Dips is as originally constructed. The station pavilion, storage shed, and cars are original. None of the noted changes alter the essential character of the side-friction figure eight style of coaster of which Leap-the-Dips is the only remaining example. These essential characteristics, which were common to all figure eights, consist of the figure eight plan and profile and the side friction track system.

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:
Nationally: X Statewide:___ Locally:___

Applicable National Register Criteria: A_X_ B_ C_X_ D_

Criteria Considerations (Exceptions): A___ B___ C___ D___ E___ F___ G___

NHL Criteria: 4

NHL Theme [1987]: XXXIV. Recreation
B. Spectator Pastimes
2. Roller Coasters

NHL Theme [1994]: II. Creating Social Institutions and Movements
4. Recreational Activities

III. Expressing Cultural Values
5. Architecture, Landscape Architecture, and Urban Design

Areas of Significance: Entertainment
Recreation

Period(s) of Significance: 1902-1920

Significant Dates: 1902

Significant Person(s): N/A

Cultural Affiliation: N/A

Architect/Builder: Edward Joy Morris (1860-1929)

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Leap-the-Dips is the last known example of a Side-Friction Figure Eight roller coaster. Side-Friction Figure Eight roller coasters were once common in amusement parks across North America as well as in parks in other parts of the world. Amusement parks first appeared in the latter half of the nineteenth century and quickly became a common and significant form of popular culture and recreation. The development of the roller coaster occurred in parallel with the development of the amusement park and was a signature attraction at nearly all parks. The Side-Friction Figure Eight type of coaster represented an important stage in the technological evolution of the roller coaster.

The early period of the roller coaster, from the appearance of the first commercial coaster at Coney Island in 1884 through the World War I era, was dominated by two technologies: Scenic Railways and Side-Frictions.

Scenic Railways were essentially miniature railways with flanged-wheeled cars running on narrow gauge tracks. Most Scenic Railways had brakemen riding the cars to control the speed of the trains, especially on curves. Many of the rides were constructed fully or partially within buildings, artificial mountains, and other structures housing elaborate scenery, giving rise to the generic term "Scenic Railway".

Side-Friction coasters employed cars with two sets of non-flanged wheels. One set supported the weight of the cars. The other set, called friction wheels, were mounted vertically on the sides of the cars and ran against sideboards mounted on each side of the track, steering the cars on their course. The arrangement gave the appearance of the cars running in a shallow trough. By eliminating concerns of derailments and overturning, Side-Frictions could operate without brakemen and could run at higher speeds, especially on curves.

There were two general types of Side-Frictions: Figure Eights and Non-Figure Eights. The Figure Eight consisted of a gradually descending profile in a multi-layered figure eight plan with the track crossing under itself in the middle several times during the course of the descent. The manufacturer used the term "Toboggan Slide" as a generic name for these rides, but many parks applied their own name. The Figure Eight was very popular, and became a standard fixture in parks across the country and in many other parts of the world during the first two decades of the twentieth century.

The Figure Eight was patented by Edward Joy Morris in 1894. Born in 1860 in Philadelphia, Morris was an early builder and operator of both roller coasters and carousels. In 1895, following his patent for a Figure Eight Toboggan Slide, Morris received a patent for an "Inclined Railway and Water Tobogganing Apparatus", an early chutes ride in which boats descended down an incline to a body of water. Morris was the designer and builder of a chutes and a toboggan at Willow Grove Park which opened near Philadelphia in 1896.

Morris was sued for his chutes device by a Mr. Paul Boyton who had erected a similar chutes ride at Coney Island. The lawsuit was dismissed by a circuit court in 1897, and Morris began installing additional chutes as well as toboggan slides (Figure Eights).

Morris's office was located at 902 Walnut St. in Philadelphia, and the factory was located at 1416-20 Callowhill Street in Philadelphia. The factory was later moved to 23rd and Ludlow Streets in Philadelphia. Additional offices were opened in Des Moines, Iowa and Leavenworth, Kansas. He also maintained an office in North Beach, Queens, New York, a resort where Morris owned land and a Figure Eight. In 1896, Morris's three brothers joined him as salesmen of the chute patent franchise. The name of the firm was the Morris Chute Company.

The Morris Chute Company also began building carousels with the first carousel delivered in 1899 for Chestnut Hill Park in Philadelphia.

By late 1903, when he sold the manufacturing side of his business, Morris had built roller coasters and carousels that he sold, leased, or operated as a concessionaire in numerous parks. A 1904 advertisement for the E. Joy Morris Co. listed 18 parks with the company's Figure Eights and/or carousels in operation by that year including six in Pennsylvania. Lakemont Park is included in the list.[1] Research by Richard Munch has identified a least 250 Figures Eights erected in North America.[2] Additional Figure Eights are known to have been built outside of North America. Many of these rides are listed as having been built by others. It is not known how many of these rides were built directly by Morris, or by others under contract or license, as opposed to those built as near copies with minor changes to avoid patent infringement. But the many postcards from that era give rise to the belief that most, if not all, of the Figure Eights were built to an identical or nearly identical design. Even the station buildings pictured in many of the postcards have the same architectural features. Thus, unlike most wooden roller coasters which are unique designs customized for each location, the Side-Friction Figure Eights were built to a standard configuration.

In 1903, Morris sold the manufacturing side of his business to two businessmen who founded the Philadelphia Toboggan Company which went on to become a major manufacturer of roller coasters and carousels. Morris continued to operate carousels, Figure Eights, and other rides as a concessionaire in over a dozen parks until 1920. He died in 1929.

Non-Figure Eights were built to a variety of custom plans and profiles and often featured more ups and downs rather than a continuously descending profile.

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1 The advertisement includes a photograph of a Figure Eight. Although the background suggests that the photograph was not taken at Lakemont Park, the coaster appears identical to Leap-the-Dips.

2 Munch, Richard. *The 1991 Roller Coaster Directory*. The directory lists over 1,750 roller coasters known to have operated in North America between 1884 and 1990. More than 250 are identified as Figure Eights. Although the list is extensive and is the result of substantial research, it cannot be considered all-inclusive. It is possible that additional Figure Eights existed that could not be identified.

In the years following World War I, the Scenic Railways and the Side-Friction coasters, both Figure Eights and Non-Figure Eights, were rapidly supplanted by coasters employing the newly-developed under-friction system with safety wheels which made possible the far more intensely thrilling designs typical of the 1920s. This third type of technology placed the friction or guide wheels below the car to run against the sides of deep rails constructed of a stack of several layers of wood, with the boards in some layers wider than others. It also featured an additional set of safety wheels which ride beneath a ledge or lip formed by the wider boards in the stack, thus locking the trains to the track. The under-friction/safety wheel system is the standard technology used for wood coasters to this day.

It is not known when the last Side-Friction Figure Eights were constructed, but by the beginning of the 1920s these rides had fallen out of favor, at least in the United States. It is believed that some Scenic Railways were built in other parts of the world as late as the 1950s.

While a few Scenic Railways are still in operation in other parts of the world, the last Scenic Railway in North America was demolished following the closing of Willow Grove Park near Philadelphia in the late 1970s.

By 1990, there were only two stationary Side-Friction coasters known to exist in the world.[3] One was a Non-Figure Eight type, the Giant Coaster, which was constructed at Crystal Beach, Ontario, in 1916. It operated through the 1989 season after which the park closed permanently. The ride stood idle for two years and was subsequently demolished in 1991.[4]

The other surviving Side-Friction is Leap-the-Dips, a Figure Eight built at Lakemont Park in Altoona, Pennsylvania in 1902. It operated through the 1985 season after which the park changed ownership and was substantially re-developed. The entire ride is fully intact. The Leap The Dips Preservation Foundation, Inc. has been founded for the purpose of raising funds to restore and operate it. The Foundation has leased the ride from Blair County (PA) and has full responsibility for it. Fund raising is currently underway.

Leap-the-Dips is the only known remaining Side-Friction Figure Eight coaster in North America.[5] It is believed to be the last of its kind in the world. It is also the oldest known

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[3] Portable side friction coasters, as well as portable models of other types of wood coasters, were used in Europe, touring fairs and carnivals. One portable side friction coaster is known to still exist in Europe, although it is not believed to currently be in use. It is not a Figure Eight like Leap-the-Dips, but intersperses figure eights and tangents in its track plan and features more hills in its profile.

[4] The trains from this coaster survive in the hands of collectors. One car is in the collection of the American Coaster Enthusiasts.

[5] The American Coaster Enthusiasts publishes an annual census of all the wooden as well as major steel roller coasters standing in North America. Leap-the-Dips is the only side-friction and only figure eight coaster listed in the census. The census is compiled from the collective knowledge and research of the organization's members. The American Coaster Enthusiasts is the world's largest organization of amusement park and roller coaster enthusiasts with more than 4000 members in the United States and 15 foreign countries including Canada, England, Germany and Australia. The organization includes many members who have done substantial historical research and who own extensive collections of amusement park and roller coaster historical information and memorabilia. Some of its members have traveled extensively to ride roller coasters throughout the world. Although coasters outside of North America

standing roller coaster in North America and is believed to be the oldest standing roller coaster in the world. During the first two decades of this century, large numbers of substantially identical rides were in operation in parks across America as well as in other parts of the world. Leap-the-Dips is the sole surviving representative of a very important period in the history of the roller coaster and the amusement park.[6]

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have not yet been documented as extensively as those in North America, it is currently believed that the locations of all standing wooden roller coasters in the world are known and that Leap-the-Dips is the only remaining roller coaster of its kind in the entire world.

[6] Leap-the-Dips was not included in an earlier "Recreation in the United States" NHL theme study because the author of that study, understood that no Side-Friction roller coasters survived in the United States. Otherwise, this important and extremely rare property would have been nominated at that time. (Interview with James H. Charleton, former NHL Survey Historian, NPS, November 1995.)

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Fried, Frederick. "E. Joy Morris and the Evolution of the Philadelphia Toboggan Company." *Merry-Go-Round Up*, 16:1 (Spring 1989), pp. 7-9, 31, 32, 34.

Halterman, Tom E. "Leap-the-Dips," National Register of Historic Places Registration Form, October 16, 1990.

Lakemont Park. Altoona: Critic Press, circa 1902. (Illustrated booklet located with Mary Ellen Leidy, 411 4th Street, Lakemont, Altoona, Pennsylvania 16602.)

Manns, William. "E. Joy Morris, Philadelphia's Forgotton Carousel Builder." *The Carousel News & Trader*, March 1989.

Morris, E. Joy. "Toboggan-Slide." Washington: United States Patent Office. Letters Patent No. 522025, June 26, 1894.

Munch, Richard. *The 1991 Roller Coaster Directory*. Fords: Coaster Posters, 1991.

Pine, William, editor. *A History of Lakemont Park*. Altoona: Lakemont Park Historical Museum, Inc., 1990.

Roesch, Richard R. Former Manager of Lakemont Park: Telephone interview on September 29, 1992; August 12, 1993; and September 17, 1994.

Previous documentation on file (NPS):

___ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
_X_ Previously Listed in the National Register.
___ Previously Determined Eligible by the National Register.
___ Designated a National Historic Landmark.
___ Recorded by Historic American Buildings Survey: #
___ Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

___ State Historic Preservation Office
___ Other State Agency
___ Federal Agency
___ Local Government
___ University
_X_ Other (Specify Repository): Author's files

10. GEOGRAPHICAL DATA

Acreage of Property: Less than one (1) acre.

UTM References: Zone Easting Northing
A 17 720710 4483060

Verbal Boundary Description:

The roller coaster and its component parts fit within a rectangular area measuring approximately 235 feet by 85 feet. The center of the figure eight (not the center of the rectangle) is located approximately 775 feet east and 190 feet north of the intersection of the centerlines of new US Route 220 and Logan Boulevard. (See attached scale map.)

Boundary Justification:

The boundary is a rectangular area drawn to directly encompass the roller coaster and its component parts which have historically been known as Leap-the-Dips.

11. FORM PREPARED BY

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Date: November 1995