ENVIRONMENTAL IMPACT STATEMENT

Proposed Flying J Traveler's Plaza, Truck Wash Facility and Water Treatment Facility,
Williams County, Ohio
June 3, 2020

Report prepared by:

Bowling Green State University
ENVS 402: Environmental Impact Statements class
(Instructor: Enrique Gomezdelcampo)

Project Manager: Kelby Ducat
Project Coordinator: Lisa Owen
Project Coordinator: Mike Plenzler

Neil Clark
Katy Goebel
Blake Hairston
Erin Hammer
Steve Hug
Cody Marshall
Ron Rice
Lisa Toich

Table of Contents

Section and Title	*Page*
Section 1: Executive Summary	8
Section 2: Proposed Project Description	9
Section 3: Environmental Setting	10
3.1 Approach and Considerations	10
3.2 Boundaries and Location	11
3.3 Previous and Current Uses	13
3.4 Current Water Usage	14
3.5 Climate and Temperature	16
3.6 Hydrology	16
3.7 Soils	19
3.8 Wildlife and Vegetation	19
3.9 Air Quality	20
3.10 Noise Levels	21
3.11 Aesthetics	22
Section 4: Alternatives	24
4.1 Alternative 1: Construction of the Traveler's Plaza and Water Treatment Facility	24
4.1.1. Water facilities	24
4.1.2. Parking lot and access road	24
4.1.3. Truck wash and diesel fuel island	25
4.2 Alternative 2: No Action (Site no Longer Considered for Development)	26
Section 5: Methods Used to Evaluate Environmental Impacts	28
5.1 Leopold Matrix	28
5.2 California Environmental Quality Act Checklist	28
Section 6: Significant Environmental Impacts of Alternatives	29
6.1 Leopold Matrix: Non-Applicable Actions	29
6.1.1. Modification of regime	29
6.1.2. Land transformation and construction	29
6.1.3. Resource extraction	30
6.1.4. Processing	30
6.1.5. Land alteration	31
6.1.6. Resource renewal	31
6.1.7. Changes in traffic	31
6.1.8. Waste emplacement and treatment	32
6.1.9. Chemical treatment	32
6.2. Leopold Matrix: Non-Applicable Environmental Items	33
6.2.1. Environmental conditions	33
1) Earth	33
2) Water	33
3) Atmosphere	33
4) Processes	33
6.2.2. Biological conditions	34

Section and Title *Page*

1) Flora 34
6.2.3. Cultural factors 34
1) Land use 34
2) Recreation 34
3) Aesthetics and human interest 34
4) Cultural status 34
6.2.4. Ecological relationships 34
6.3. CEQA Checklist: Non-Applicable Sections 36
6.3.1. Agricultural resources 36
6.3.2. Cultural resources 36
6.3.3. Geology and soils 36
6.3.4. Hazards and hazardous materials 36
6.3.5. Hydrology and water quality 36
6.3.6. Land use and planning 36
6.3.7. Noise 37
6.3.8. Population and housing 37
6.3.9. Public services 37
6.3.10. Recreation 37
6.3.11. Transportation/Traffic 37
6.4. Leopold Matrix: Assessment Results 38
6.4.1. Environmental actions that most impacted project site 38
6.4.2. Environmental items most greatly affected by proposed project 38
6.4.3. Project action from proposed project that improves site 39
6.5. CEQA Checklist: Impact Assessments 40
6.5.1. Aesthetics 40
6.5.2. Air quality 40
6.5.3. Biological resources 41
6.5.4. Geology and soils 41
6.5.5. Hazards and hazardous materials 42
6.5.6. Hydrology and water quality 42
6.5.7. Land use and planning 43
6.5.8. Mineral resources 43
6.5.9. Noise 43
6.5.10. Population and housing 44
6.5.11. Transportation/Traffic 44
6.5.12. Utilities and service systems 45
6.5.13. Mandatory findings of significance 45
Section 7: Methods Used to Evaluate Alternatives 46
Section 8: Mitigation Measures 48
Section 9: Conclusion 55
Section 10: Recommendations 56

Section and Title	*Page*
Section 11: Interest Groups and Agencies	57
Section 12: List of Preparers of Draft EIS Report	61
Bibliography	63
Appendices	67
Appendix A. Leopold Matrix	68
Appendix B. CEQA Checklist	70

List of Tables

	Page
Table 1. Williams County Emissions Summary	20
Table 2. Average Decibel Levels for Common Noise Sources	21
Table 3. Summary of Alternative Ratings for Traveler's Plaza	46
Table 4. Adkins-Burke Checklist for Traveler's Plaza	47

List of Figures

	Page
Figure 1. View of State Route 49 and Ohio Turnpike, Exit 1	11
Figure 2. Aerial View of Proposed Site	12
Figure 3. Exxon/Mobil Gas Station/Subway Restaurant and Burger King	13
Figure 4. Wastewater Treatment Facility	14
Figure 5. Catchment/Pond Located Southeast of Current Structures	15
Figure 6. Average Monthly Precipitation for Williams County	16
Figure 7. St. Joseph River Watershed	17
Figure 8. Water Yields	18
Figure 9. Aerial View of Proposed Site and Surrounding Aesthetics	22
Figure 10. Lot Behind Burger King	23
Figure 11. Proposed Site in Background	23
Figure 12. Gravity Oil/Water Separator	50
Figure 13. Oil/Water Separator Flow Design	51

List of Appendices

	Page
Appendix A. Leopold Matrix	68
Appendix B. CEQA Checklist	70

Section 1. Executive Summary

Truck stops are common occurrences along most highways and interstates across the nation. These truck plazas can be public or private dependent on if they are operated by the State's Department of Transportation or by private companies. Both public and private truck stops provide the vital service of daytime and nighttime parking to allow safe venues for drivers to rest. In a 1999 Rest Area Forum survey, 90 percent of truck drivers stated that they had difficulty finding parking space in public truck stops at least once a week, and 36 percent had problems every night. A majority of drivers would like to see more private truck stops or plazas constructed as they are preferred for long periods of rest. This is due to the services provided by private plazas that are not often supplied by public ones, including showers, laundry facilities, lounges, restaurants, and diesel pumps. The Trucker's Friend Online (2004) reports that currently, in Ohio, there are 1,906 privately owned truck stops; and of these, 1,369 have convenience stores, 320 have 24-hour restaurants, and 1,390 have diesel pumps.

The Environmental Studies 402 class: Environmental Impact Statements worked with the client, Maumee Valley Planning Commission, to research the environmental impacts of constructing a traveler's plaza off of the Ohio Turnpike (I80/90) exit 1, Williams County. The proposed site location is in the northeastern sector of the Ohio Turnpike and State Route 49.

Consultation with Dennis Miller of the Maumee Valley Planning Commission, Denny Bell of the Williams County Engineering Office, the Northwest Ohio Environmental Protection Agency District Office, and environmental impact assessment methodology: Leopold Matrix (Appendix A) and the California Environmental Quality Act Checklist (Appendix B), were used to determine the environmental effects that the proposed traveler's plaza would have on this site.

The preferred alternative is to recommend that the Flying J Corporation proceed with construction of the proposed traveler's plaza. The economic gains for the corporation and the county from this project will most certainly outweigh the minimal environmental impacts.

Section 2. Proposed Project Description

The Flying J Corporation has proposed the construction of a privately owned traveler's plaza in Northwest Township, Williams County, at Exit 2 of the Ohio Turnpike. Along with the proposed traveler's plaza, the Northwest Township Water District will also construct water treatment and distribution facilities, a water tower, and drill two wells. These water related constructions will provide the water flow necessary for the required fire suppression system.

The traveler's mall will include a general store and restaurant requiring 2,600m^2 (28,000 ft^2). Twelve diesel pumps will be added behind the existing Exxon/Mobil gas station/Subway restaurant, along with a truck wash facility approximately18,560m^2 (200,000 ft^2). The paved entry, already in existence, acts as the entrance to the Burger King restaurant, the Exxon/ Mobil gas station/Subway restaurant, and truck tire service station, will also facilitate the proposed traveler's mall. The water treatment facility, water tower, and two wells are to be constructed to the southeast of the proposed traveler's plaza near the existing woods. Pipes will be installed to distribute water from the treatment facility, northwest to the plaza, and then north to the site of a future hotel at the southwest corner of U.S. Route 20 and SR 49. Capacity for the water treatment plant will be 260,000 liters (70,000 gallons) per day, and the water tower will be capable of holding 950,000 liters (250,000 gallons) of water. Each of the two wells will be 25.4 centimeters (10 in) in diameter and capable of pumping up to 380 liters (100 gallons) of water per minute. The treatment facility, tower and wells will cover an area of 45,000m^2 (480,000 ft^2).

This report presents the results of the analysis of the impact of the construction of the plaza and water system on the surrounding environment. The impacts considered include hydrological, ecological, aesthetic, air quality, and traffic. The recommendations are based on potential impacts, as well as any mitigation necessary for the determined significant impacts.

Section 3. Environmental Setting

3.1 Approach and Considerations

Two main aspects of the project were being considered: the construction of the traveler's plaza and a new water treatment facility. The analysis conducted shows how these two construction efforts, known collectively as the traveler's plaza project, will affect: (1) water quality and quantity, (2) air quality, (3) surrounding lands and soil, (4) local wildlife and vegetation, and (5) sound and light levels.

The first potential impact studied was the impact of the plaza project on the quality and quantity of local water systems. The construction of the traveler's plaza will include the paving of a large parking area that could ultimately lead to an increase of stormwater and pollutant runoff, which could include salt from winter de-icing. The runoff will flow into the existing catchment/pond area south of the site and eventually discharge into Eagle Creek creating the potential for a degradation of water quality.

The second impact is the potential for a higher amount of air pollution in the environment surrounding the traveler's plaza. The plaza will generate an increase in truck traffic in the immediate area. This increase in traffic may potentially be accompanied by an increase in noxious gasses and other pollutants, lessening the air quality of the area.

The third potential impact of the project is the possible degradation of the surrounding natural lands. This includes an investigation into the potential negative impacts to the adjacent wooded area as well as an analysis of the surrounding soil, allowing for a better understanding of the possible adverse effects that could be incurred.

The fourth potential impact considered in the project is the impact that the traveler's plaza may have on local wildlife and vegetation. The flora and fauna surrounding the construction site were identified along with the possible impacts that could occur, therefore attempting to predict the potential for possible displacement or extinction due to the proposed project.

The final potential impact studied is the increase in sound and light levels. These lesser known pollutants may adversely affect the surrounding areas both during and after the truck plaza project, and therefore need to be given due consideration in the analysis of the project.

3.2 Boundaries and Location

The site proposed for the construction of the traveler's plaza is located in the northeastern sector of the intersection of State Route 49 and the Ohio Turnpike in Northwest Township in Williams County, Ohio (Figure 1).

Figure 1. View of State Route 49 and Ohio Turnpike, Exit 2

The traveler's plaza would receive traffic from both SR 49 and the Turnpike as well as from U.S. Route 20, which is north of the proposed site. The site (Figure 2) is bounded by land that has been developed or is slated for future development. Existing businesses surrounding the site include a truck tire service station to the south, a Burger King restaurant to the southwest, and an Exxon/Mobil gas station/Subway restaurant to the west. The land northwest of the site is awaiting future construction of a hotel and east of the site is an undeveloped wooded area.

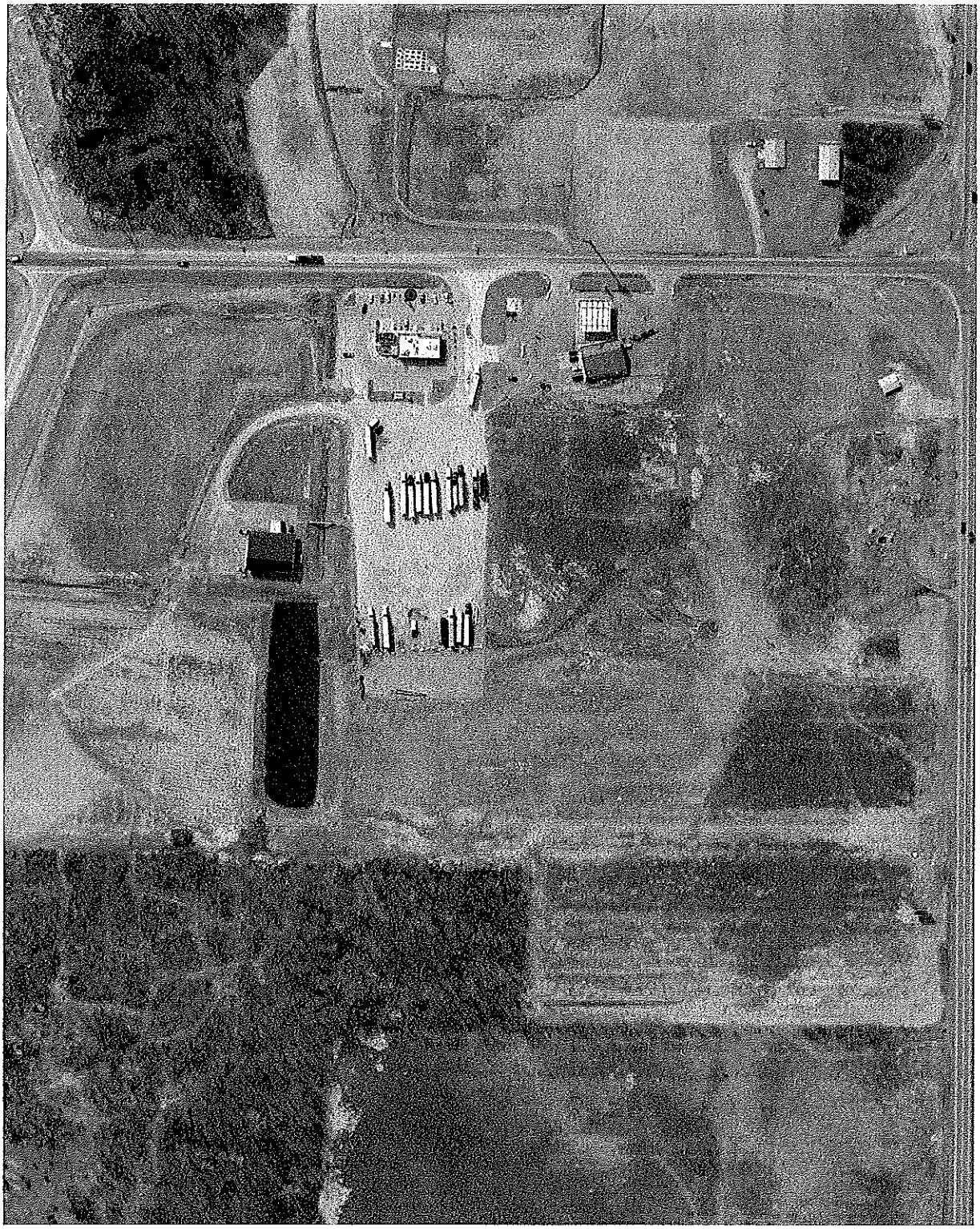


Figure 2. Aerial View of Proposed Site

3.3 Previous and Current Uses

The property on which the proposed project will be built is privately owned. There were a total of nine property owners from 1944 to 1968. Over these years the land was primarily farmland, rotating crops of soybeans, corn, and wheat. The owners also participated in the government program that allowed the land to lie idle and support primarily grasses, small foliage, and other vegetation. During those earlier decades, wildlife, along with native and invasive species of plants, thrived. In 1994, Ronald and Connie Bidwell sold 39.497 acres to Mid-Toll, Inc., who then sold the property to Quadland Corporation for development.

Quadland developed the land to include a Burger King restaurant with a truck rest area, an Exxon/Mobil gas station/Subway restaurant (Figure 3), and a truck tire service station.

Figure 3. Exxon/Mobil Gas Station/Subway Restaurant and Burger King

The remainder of the land lies unused and ready to be developed. Other development in the area includes a tourist center for travelers and a wastewater treatment facility (Figure 4) located west of the site across SR 49.

Figure 4. Wastewater Treatment Facility

3.4 Current Water Usage

The three existing facilities, Exxon/Mobil gas station/Subway restaurant, Burger King Restaurant, and a truck tire service station currently utilize two wells for their water source. This water meets the Federal EPA drinking water regulations. The Williams County Health Department is responsible for gathering water samples from the wells, which are then sent to the Northwest District Office of the Ohio EPA for testing. All stormwater from the existing site is drained into a catchment/pond southeast of the structures (Figure 5).

Figure 5. Catchment/Pond Located Southeast of Current Structures

The wastewater generated by the existing businesses is sent to an extended aeration package plant located west of the structures across State Route 49. Following treatment by the package plant the water is sent on to a stabilization pond located in the same area. The package plant and stabilization pond currently handles 132,490 liters (35,000 gallons) of wastewater per day but has the capacity to handle 264,980 liters (70,000 gallons) per day. According to Denny Bell, Williams County Engineer, the Ohio EPA requirement for this system allowed discharge from the pond into nearby Eagle Creek only during the winter months to reduce any odors from the effluent. The current flow into the wastewater plant has been so low that no water has been discharged into the creek.

Eagle Creek is a warm water aquatic life habitat and is part of the Maumee River Watershed. According to the use designations from the Maumee Drainage Basin, the creek is designated for agricultural and industrial use, as well as primary contact recreation, e.g. fishing. These regulations follow the Ohio Water Quality Standards section of the Ohio Administration Code.

3.5 Climate and Temperature

The annual precipitation for Williams County is 34.5 inches. Figure 6 below illustrates the average monthly precipitation for the county for the period 1961 to 1990, as compiled by the Ohio State University's Food, Agricultural and Biological Engineering Program over a 30-year span. Based on this record, the average precipitation is 2.9 inches per month, with January typically being the driest month (1.7 inches), and July the wettest (3.6 inches). The annual maximum average temperature for the area is 59°, the annual minimum average is 38° and the annual average temperature is 48.5°.

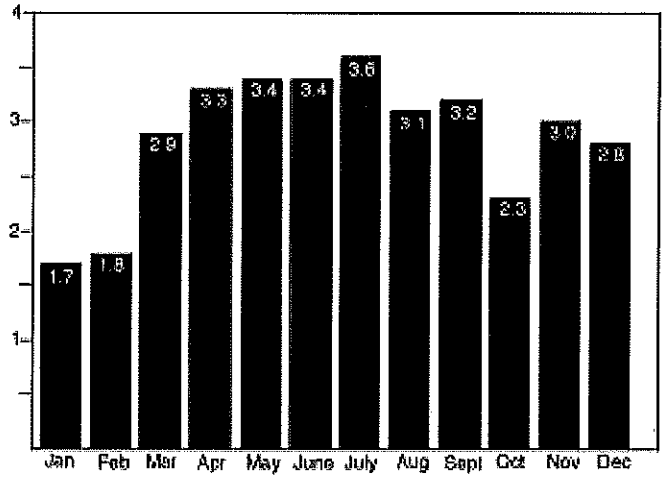


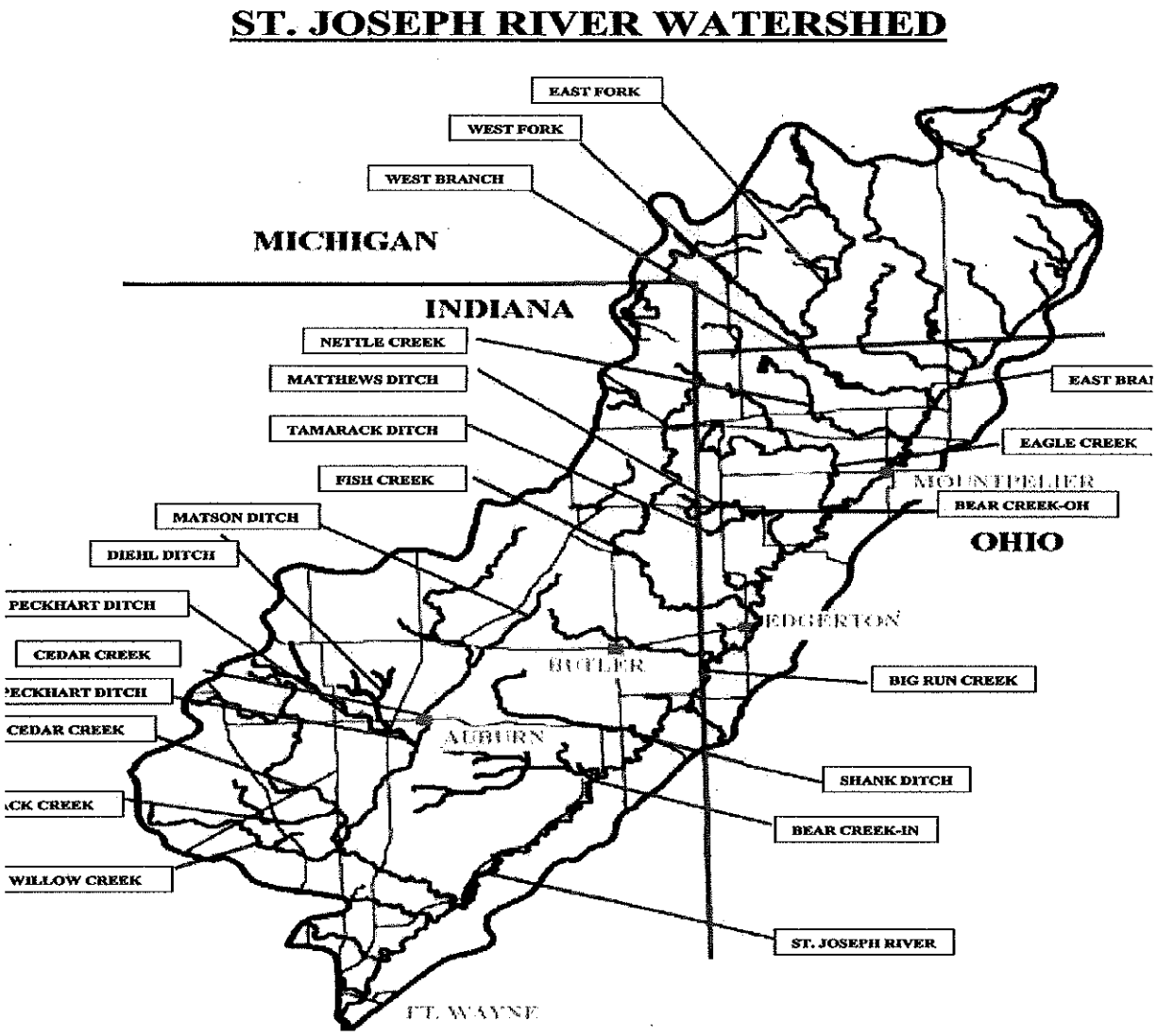
Figure 6. Average Monthly Precipitation for Williams County

3.6 Hydrology

Williams County has two major drainage basins, the St. Joseph River and the Tiffin River. The St. Joseph River flows southwest from Michigan, draining the west half of Williams County, and the northwest portion of Defiance County before it enters the Maumee River at Fort Wayne, Indiana. The project site lies within the St. Joseph River watershed (Figure 7).

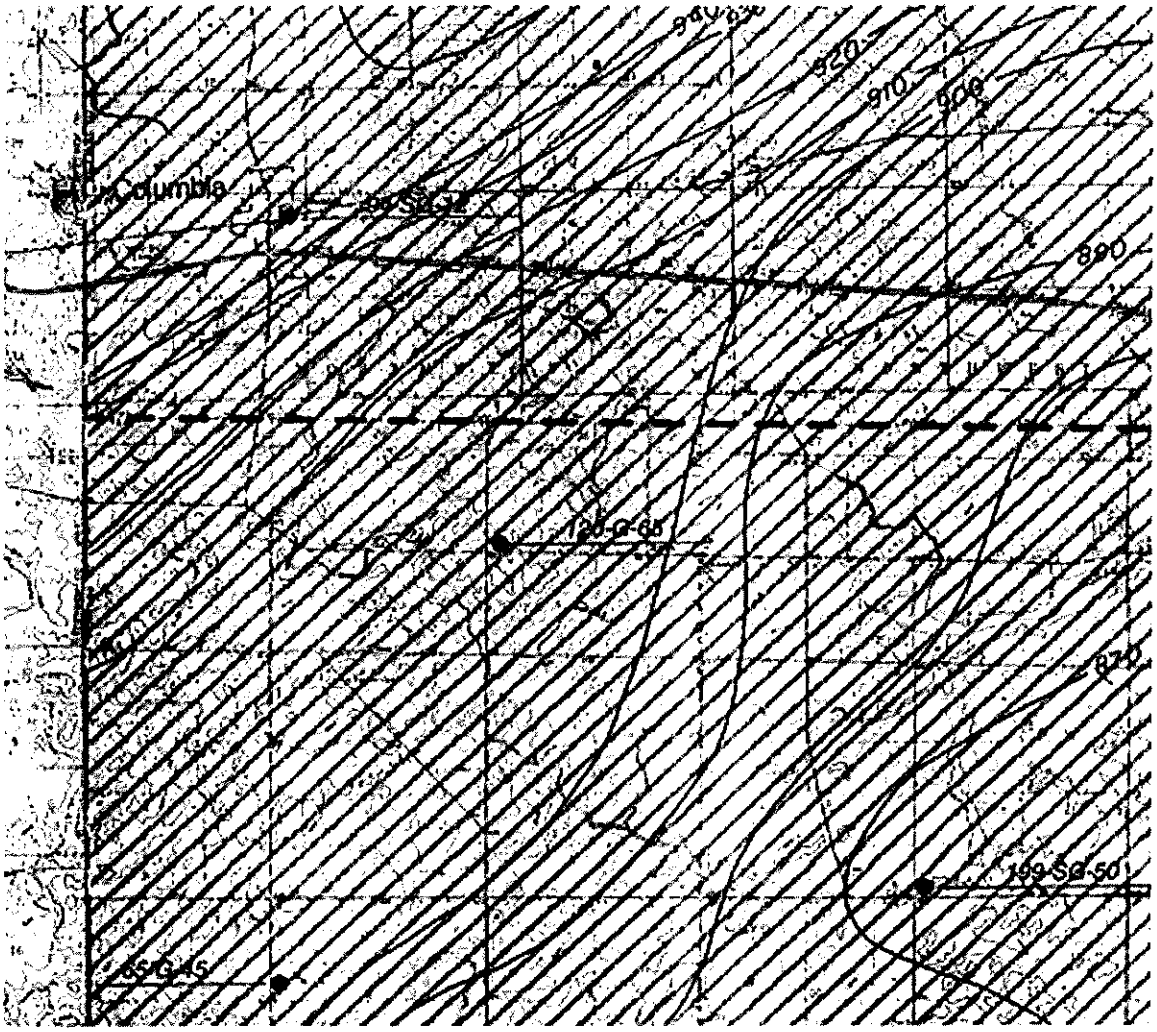
The Tiffin River begins in Michigan and flows south through Williams and Defiance counties where it enters the Maumee River. There are three aquifer systems that underlie Williams County. The major aquifer is located in the northwest (project site) and central part of Williams County. Yields of 379 to 1,893 liters (100 to 500 gallons) per minute at depths of 18 to 73 meters (60 to 240 feet) in this aquifer are typical (Figure 8). Properly constructed wells

could yield as high as 3,785 liters (1,000 gallons) per minute, and could be used for irrigation or for industrial and municipal purposes.



3

Figure 7. St. Joseph River Watershed



AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED

Regionally extensive glacial deposits of sand and gravel interebdded within layers of clay may yield up to 500 gallons per minute from properly drilled and screened wells. The total thickness of these glacial deposits ranges from 100 to 250 feet.

Figure 8. Water Yields

3.7 Soils

Approximately 49 different soil series are present within Williams County; the majority of which are loamy or poorly drained clays.

The soil textures of the St. Josephs River drainage basin are predominately silt loam, silty clay loam, and clay loam formed from compacted glacial till. Soil associations include Mini-Morley, Morley-Glynwood-Blount, and Pewamo silty clay loam. The Pewamo silty clay loam is represented by a dark grayish brown silty clay loam about nine inches thick on a surface layer profile. The firm subsurface consists of a several different shades of clay ranging from dark gray to a yellowish brown. The soil is suited for impoundments due to the fact that the permeability is slow.

The soils present in the project area are also from the glacial till, ranging in thickness from 52 to 100 meters (170 to 330 feet), with an average thickness of 76 meters (250 feet), covering the bedrock. Mississippian shales underlie the glacial deposits composed of coarse sand and gravel. Additional soils in the site include Blount, loamy substratum-Glynwood and Glynwood-Rawson associations. Blount, loamy substratum-Glynwood association can be described as nearly level to moderately steep, somewhat poorly drained and moderately well drained soils that have clayey and loamy subsoil; and found on uplands. Glynwood-Rawson association is gently sloping to moderately steep, moderately well drained soils that have loamy and clayey subsoil; and found on up lands and is represented by a dark grayish brown loam of clay.

3.8 Wildlife and Vegetation

The wildlife found on and adjacent to the proposed site in Northwest Township in Williams County includes white-tailed deer, fox, raccoons, muskrats, and other terrestrial land animals such as reptiles (snakes) and amphibians (frogs, toads, etc.). During the spring and fall migrations, waterfowl are attracted to the lakes, ponds, and wetlands of the area. Due to the fact that the proposed site is not within a protected area, is close to the turnpike and recent development has occurred, the habitats of the local wildlife have already been impacted.

A majority of the previous vegetation on the site, consisting of grasses and shrubs, has been removed with past development in the area. There is a woodlot to the east of the proposed site that will serve as thedevelopment site for the water facilities for this project.

3.9 Air Quality

Williams County is considered one of the lowest ranked counties in Ohio in regard to health risks from air pollutants (Scorecard 1999). Table 1 provides a 1999 summary of specific emissions from air pollutants in Williams County.

Table 1. Williams County Emissions Summary

Sources	CO	NO	PM-2.5	PM-10	SO_2
Mobile	16,206	3,655	451	1,868	238
Area	1,213	300	686	2,682	258
Point	4	1	134	146	22
All	17,423	3,957	1,272	4,696	519

Diesel truck exhaust is found to contain the following pollutants: carbon monoxide, carbon dioxide, nitrogen monoxide, nitrogen dioxide, sulphur dioxide, suspended particles including PM-10, particles less than 10 microns, benzene, formaldehyde, and polycyclic hydrocarbons (polycyclic organic matter).

Carbon monoxide (CO), carbon dioxide (CO_2), and nitrogen dioxide (NO_2) are the result of the burning of fossil fuels. Combustion from the diesel trucks creates nitrogen monoxide (NO) and suspended particles, while emissions produce the formaldehyde and polycyclic hydrocarbons. Sulfur dioxide (SO_2) is a byproduct of the burning of oil and benzene as a result of the production of gasoline and diesel.

An air quality consideration would be environmental risks. Carbon monoxide elevates concentrations of methane and ozone into the atmosphere. It also oxidizes into carbon dioxide or "greenhouse gas," that traps the earth's heat contributing to the potential of global warming. Nitrogen dioxide forms ozone, acid rain, and particles that may lead to changes in plant species composition and diversity in terrestrial and wetland systems, and acidify soils and surface waters. The sulfur dioxide dissolves into water vapor to form acid rain which can travel long distances and deposit far from its point of origin.

Health risks also need to be considered. Though carbon dioxide and nitrogen monoxide have no direct affect on human life; nitrogen dioxide, sulfur dioxide, particulates, formaldehyde, and polycyclic hydrocarbons are known to have an effect on the respiratory

system. Carbon monoxide interferes with the oxygen flow in the bloodstream, impedes coordination, and worsens cardiovascular conditions. Benezene and polycyclic hydrocarbons have also been linked to the development of leukemia and lymphoma or the loss of bone marrow.

3.10 Noise Levels

The proposed area is considered a semi-rural setting with currently no concern for excessive noise level. Presently, traffic is considered steady with cars and trucks entering and exiting the proposed site daily. During rush hour times there is an increase of traffic due to motorists traveling to and from work, stopping to refuel or dining. Projections estimate the number of tractor trailers that will be using the traveler's plaza as 200 per day. The average noise level of heavy semi truck traffic is 90-100 decibels, while the noise level from other automobile traffic is 70 decibels. Throughout the area people using their horns to notify other motorists of their presence is projected at a non-continuous noise level of 120 decibels. The following chart (Table 2) indicates how loud the noise levels on the site are, compared with other common sounds.

Table 2. Average Decibel Levels for Common Noise Sources

Common Sounds	Noise Level (dB)
Rocket launching pad	180
Carrier deck jet operation	140
Air raid siren	140
Thunderclap	130
Jet takeoff (200 ft.)	120
Auto horn (3 ft.)	120
Rock concert	110
Garbage truck	100
Firecrackers	100
City traffic	90
Alarm clock (2 ft.)	80
Freeway traffic	70

3.11 Aesthetics

The extent of aesthetic value is limited at the proposed site as much of the project area has already been developed. There is aesthetic value however from the presence of two

nearby woodlots. One is located to the southwest of the proposed site, at the northwestern sector of the intersection of SR 49 and the Ohio Turnpike and the second is southeast of the proposed site (Figure 9).

Figure 9. Aerial View of Proposed Site and Surrounding Aesthetics

Much of the area to the east of the site, behind the Burger King restaurant has no aesthetic value as it has already been cleared for use as a truck parking lot (Figure 10).

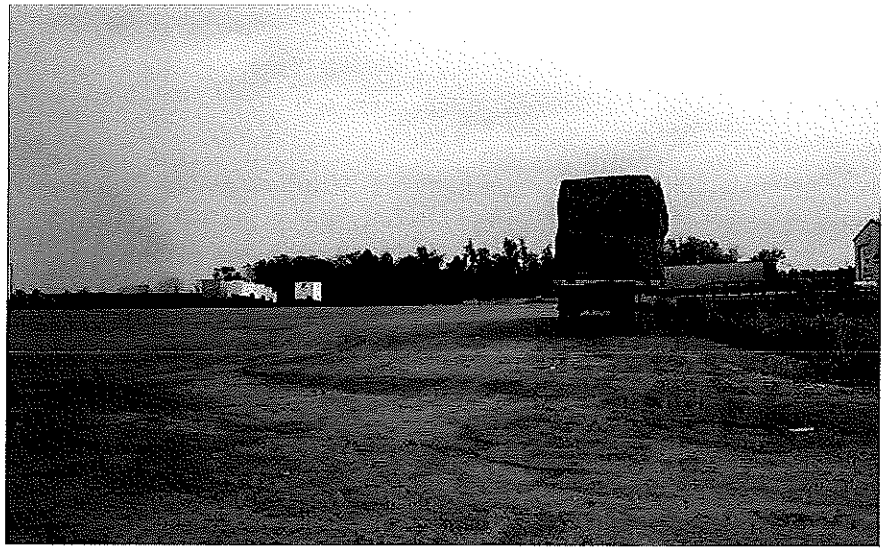


Figure 10. Lot Behind Burger King

One aesthetic consideration to the south is the catchment/pond and its surrounding vegetation south of the parking lot (Figure 1). Past the pond to the south is a grass dominant area leading up to the turnpike and another grass area north to U.S. Route 20. The actual site has already been cleared so there is no aesthetic value apparent (Figure 11).

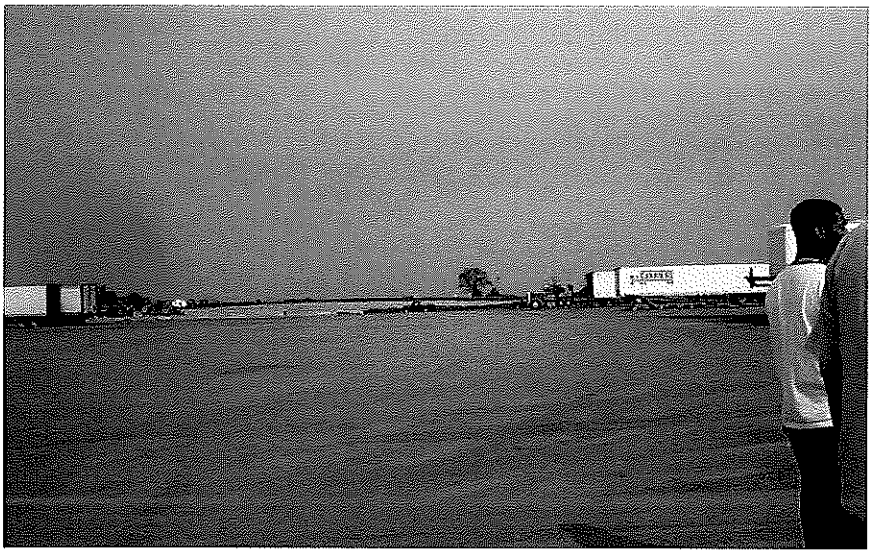


Figure 11. Proposed Site in Background

Section 4. Alternatives

4.1 Alternative 1: Construction of the Traveler's Plaza and Water Treatment Facility

This alternative proposes to build a truck stop plaza covering 232,290m^2 (57.4 acres) of land. The facilities will be located in Northwest Township, Williams County off the Ohio Turnpike, Exit 2 to SR 49. The site currently includes a Burger King restaurant, Exxon/Mobil gas station/Subway restaurant and truck tire service station. This proposal includes the addition of a traveler's plaza (full-service restaurant and general store), two wells, a water tower, a water treatment facility, diesel pumps, the paving of an existing parking lot, a truck wash facility and an access road. The building of this facility will create 65 full-time jobs for the surrounding community.

4.1.1. Water facilities

The infrastructure for this component of the project will involve the construction of a 348m^2 (3,750 ft^2) water treatment facility and a 1,135,624 liters (300,000 gallon) elevated water tower, in addition to the drilling of two ten-inch supply wells, each with 92m (300 feet) isolation radii. The wells will be fenced and the enclosed area will be maintained with grass cover. The water from the wells will be pumped up to 379 liters (100 gallons) per minute and treated at the on-site water treatment facility utilizing a filtration and chlorination system. This entire project will be built on the east side of the proposed site. In addition, a booster pump will be added to the north end of the project providing the flow necessary for a fire suppression system. A 60,960m (2,000 linear feet) underground pipeline will be constructed to transport water from the tower to the facilities. The entire water system will cover a 44,515m^2 (11-acre) area. The wastewater from the proposed project will be treated by extended aeration in the current wastewater treatment facility which is located west of the site across SR 49.

4.1.2. Parking lot and access road

Directly east of the existing Exxon/Mobil station/Subway restaurant and the Burger King restaurant, an asphalt with limestone base parking lot will be constructed at the current

gravel lot location, covering approximately 93,078m^2 (23 acres). It is estimated that up to 200 trucks a day will park in this lot.

An access road will be constructed southwest of the existing parking lot, extending from the existing entrance between the Burger King and Exxon/Mobil gas station/Subway restaurant which intersects with SR 49. The road will be built southeast of the end of the entrance road and will extend east just north of the drainage catchment/pond with a turn-around in front of the south well. Consisting of the same material as the parking lot, the road will be made of asphalt with a limestone base. The finished roadway will be approximately 305m (1,000 linear feet).

All stormwater from the parking lot and road will first be directed to the oil/water separator and then to the catchment/pond.

4.1.3. Truck wash and diesel fuel island

The truck stop will service up to 200 trucks per day. A 1,858m^2 (20,000 ft^2) truck wash will be constructed on the site to service the diesel trucks. This facility's wastewater will be discharged to the existing wastewater facility across SR 49. The addition of diesel fuel service to the current Exxon/Mobil gas station will include four underground storage diesel tanks buried directly east of the station. Each 75,708 liters (20,000 gallon) diesel tank will be placed in a 318m^2 (3,420 ft^2) area. The four storage tanks will service 12 pumps above ground. Red Jacket leak detectors, one for every two tanks, will be located underground to detect any hazardous leaks. A 7,571 liters (2,000 gallon) oil water separator, mandated by the State of Ohio, will be located at the diesel fuel island. The water draining from the separator will be routed to the existing catchment/pond south of the proposed project.

4.2 Alternative 2: No Action (Site is no Longer Considered for Development)

Under this alternative, there will be no construction of a traveler's plaza, truck wash, water treatment facility, diesel fuel pump island or road extension at the proposed site. As a result, the area will remain as it currently exists and only include the Exxon/Mobil gas station/ Subway restaurant, Burger King restaurant, truck tire service center, and gravel parking lot.

Since there will be no new construction the aesthetics and the current look of the area will remain unchanged. There will be no need to bring in construction equipment to the site, which will not increase noise pollution or traffic congestion. The developer of the project will not incur any expenses for the equipment and materials budgeted for the construction of the plaza. The existing parking lot behind the Burger King restaurant will remain gravel, so no new drainage lines will need to be installed there nor in the area of the proposed truck wash.

Construction equipment will not be needed to dig holes for the additional diesel gas tanks, thus eliminating the cost of the equipment and the gas tanks. Since there will be no traveler's plaza built in the area, there will be no economic gains for the developer. The existing Exxon/Mobil gas station/Subway restaurant will retain the same number of employees, but will see no large increase in revenue. The business will continue to see limited economic gains from the existing eight pumps and from the concessions area/restaurant.

With the no action alternative, the traveler's plaza would not be built on the site. The two proposed wells would not be drilled as there is no need for increased water supply. If the wells are not needed, then the equipment, pumps, and materials needed for the construction and operation of the two weeks will not be needed or transported to the proposed site and no cost will be incurred by Quadland. The land proposed for the wells will remain undeveloped, and the supply of the underground aquifer will not be utilized for the project.

The water treatment facility will also not be needed if the traveler's plaza is not constructed. Materials and equipment for the construction will not be required at the site and no costs will be incurred for the construction or operation of the plaza. The area where the water treatment plant was planned to be built will remain undeveloped. Furthermore, the waterline extension for the transfer of water from the water treatment plant to the traveler's plaza will not be needed since the plaza will not be built. No equipment or materials will be needed on the site to dig the trench or lay the pipe which will therefore cause no cost or disturbance of the proposed site. A water tower will also not be built under the No Action

Alternative. This would also create no cost or disturbance as well as require no equipment or construction materials.

In addition to not requiring additional water, the No Action Alternative will also not create any wastewater since the truck wash or plaza will not be built. Therefore, there will be no need to create a drainage system to transfer water from the traveler's plaza across the street to the wastewater treatment facility. Without the additional wastewater, the existing wastewater treatment facility will continue to facilitate the Burger King, Exxon/Mobil gas station/Subway restaurant, and truck tire service center.

Section 5. Methods Used to Evaluate Environmental Impacts

5.1. Leopold Matrix

The Leopold Matrix is an interaction matrix that uses a scale of -10 to +10 to measure the potential magnitude and significance of impacts due to a proposed project. The matrix is comprised of a grid of possible project actions along the horizontal axis and environmental factors along the vertical axis. The matrix presented in this document was modified (items subtracted) from the original Leopold Matrix to better fix the proposed project. The matrix only identifies direct impacts. It does not address issues such as the timing and duration of impacts. The Leopold Matrix for this project is located in Appendix A.

5.2. California Environmental Quality Act Checklist

The California Environmental Quality Act Checklist is a descriptive checklist that identifies the environmental factors that should be addressed and includes lists of environmental impact predictions and assessments. This list is used by the State of California for environmental impact assessment. The CEQA Checklist for this project is located in Appendix B.

Section 6. Significant Environmental Impacts of Alternatives

6.1 Leopold Matrix: Non-Applicable Actions

6.1.1. Modification of regime

a. Exotic fauna introduction: No exotic fauna will be introduced into the projects site.
b. Biological controls: Biological controls will not be an issue or a factor for this project.
c. Modification of habitat: There will be no modification of habitat at suspected site that has already altered and currently there are no habitats to modify with.
g. River control and flow modification: No rivers exist on the site to be controlled or modified.
h. Canalization: No canals exist on the site to be canalized.
i. Irrigation: There are no irrigation units located within the area.
j. Weather modification: The project will not modify the weather in any way.
k. Burning: No burning will occur with this project.

6.1.2. Land transformation and construction

a. Urbanization: There will be no urbanization implemented with this project, the site is located in a rural area.
c. Airports: No airports will be constructed with this project as well as no impact to existing airports.
d. Highways and bridges: No highways or bridges will be introduced into the site or will the current systems be impacted.
f. Railroads: No railroads will be constructed for this project or will any be hindered.
g. Cables and lifts: Cables and lifts will not be constructed or used or will existing systems be altered.
j. Channel dredging and straightening: No channels will be dredged or straightened with this project and no channels currently exist.
k. Channel revetments: No channels will be created and no channels currently exist to be impacted.
l. Canals: No canals will be constructed and there are no canals currently to be effected.

m. Dams and impoundments: No dams or impoundments will be implemented with this project and none currently exist in the area.
n. Piers, seawalls, marinas, and sea terminals: None of these items will be constructed with this project and none currently exist in the area to be impacted.
o. Offshore structures: The project is located inland, not near a shore.
p. Recreational structures: There are not any recreational structures located at this project.

6.1.3. Resource extraction

a. Blasting and drilling: No blasting or drilling for resource extraction.
e. Dredging: This project does not include any dredging.
f. Clear cutting and other lumbering: There is no need since the project is on flat area.
g. Commercial fishing and hunting: This project is not located on commercial fishing or hunting.

6.1.4. Processing

a. Farming: There is no farming on this site.
b. Ranching and grazing: No ranching and grazing exist on this site.
c. Feed lots: This project does not involve any feed lots.
d. Dairying: This project does not involve any dairying.
e. Energy generation: This project does not include any energy generation.
f. Mineral processing: This project does not include any mineral processing.
g. Metallurgical industry: This project does not include any metallurgical industry.
h. Chemical industry: This project does not involve chemical industry.
i. Textile industry: This project does not possess any textile industry.
j. Automobile and aircraft: This project will not impact automobiles or aircrafts.
k. Oil refining: This project does not possess any oil refining.
l. Food: Food processing will not be implemented in this project.
m. Lumbering: This project will have no impact on lumbering in the area.
n. Pulp and paper: This project will have no impact on pulp and paper in the area.
o. Product storage: There will be no products generated therefore there is no need for product storage associated with the project.

6.1.5. Land alteration

a. Erosion control and terracing: There will be no terracing done for the project and therefore there will be no need to consider terracing or erosion control.
b. Mine sealing and waste control: There are no mines within the proximity of the project therefore sealing or controlling mine wastes will not be necessary.
c. Strip-mining rehabilitation: There are no strip mines within the proximity of the project therefore strip mine rehabilitation is not applicable to the project.
d. See "Applicable Actions".
e. Harbor dredging: There are no harbors near the project site therefore harbor dredging is not applicable to the project.
f. Marsh fill and drainage: The project does not include any marshlands so marsh fill and drainage do not apply to the project.

6.1.6. Resource renewal

a. Reforestation: There will be no deforestation occurring because of the project and therefore no need for reforestation consideration.
b. Wildlife stocking: Wildlife stocking does not pertain to any aspect of the project at hand.
c. See "Applicable Actions".
d. Fertilization application: There will not be any fertilizer application done during the course of the project, therefore there is no need for consideration.

6.1.7. Changes in traffic

a. Railway: The project would pose no changes to any railway systems.
b. See "Applicable Actions".
c. See "Applicable Actions".
d. Shipping: There are no major ports or harbors near the project site that would be affected by the project. The project will not effect shipping operation of the Ohio Turnpike (I-80/ I-90).
e. Aircraft: There are no local airports that would be affected by the project.
f. River and canal traffic: There are no rivers or canal within a close proximity to the project site, making it not applicable for consideration.

g. Pleasure boating: There are no major waterways that would be used for pleasure boating within a close proximity to the project site.

h. Trails: There are no trails of any sort within the project site, and none in the area will be impacted.

i. Cables and lifts: There are no cables or lifts that are proposed for this project

j. Communication: There will be no impact on communication

k. Pipeline: There is no pipeline within the project site, so impacts on pipelines will not occur.

6.1.8. Waste emplacement and treatment

a. Ocean dumping: The proposed site is no where near the ocean. No waste materials from this project will be dumped into the oceans.

b. Landfill: No waste materials from this project will be disposed of in a landfill.

c. Emplacement of tailings, spoils, and overburden: There will be no mining occurring so there will be no tailings, spoils, and overburden.

d. Underground storage- There will be no underground storage of wastes associated with this project.

f. Oil well flooding: This project will have no effect on, or use oil wells.

g. Deep well emplacement: There will no deep wells drilled for waste.

h. Cooling water discharge: There is no need for cooling water for this project, so none will be discharged.

i. Municipal waste: There will be no discharge of municipal waste.

j. Liquid effluent discharge: No liquid effluent discharge will be associated with this project.

k. Septic tanks: No septic tanks will be installed on the project site.

l. Spent lubricants: No spent lubricants will be disposed of on the project site.

6.1.9. Chemical treatment

a. Chemical stabilization of soil: No chemical soil stabilizers will be utilized for this proposed project.

b. Weed control: There will not be any herbicides applied over course of the project.

e. Insect control: There will not be any pesticides applied over course of the project.

6.2. Leopold Matrix: Non-Applicable Environmental Items

6.2.1. Environmental conditions

1) Earth

a. Mineral resources: No mineral resources will be extracted or effected through the actions of this project.

d. Land form: There will be no land transformations with the implementation of this project.

e. Force fields and background radiation: There are no force fields or radiation located in the area of which this project will take place.

f. Unique physical features: There are no unique physical features located in the area of the project to be impacted.

2) Water

b. Ocean: There are no oceans located near or within the projects site.

3) Atmosphere

b. Climate (micro, macro): The climate will not be impacted with the construction and implementation of this project.

4) Processes

a. Floods: This project is not located in any flood plans or will it cause flooding to occur.

d. Solution: No solution will be impacted or introduced with this project.

e. Sorption (ion exchange, complexing): No sorption will be introduced or effected with this project.

g. Stability (slides, slumps): No problems will be associated with the stability of the area it is primarily flat terrain.

h. Stress-strain (earthquakes): The area of which the project will take place is not located on any faults or terrain which is earthquake sensitive.

i. Air movements: The movement of air will not be impacted or altered with this project.

6.2.2. Biological conditions

1) Flora

d. Crops: Crops will not be impacted by this project.

f. Aquatic plants: This project does not impact any aquatic plants.

h. Barriers: Barriers are not be impacted by this project.

i. Corridors: Corridors are not affected by this project.

6.2.3. Cultural factors

1) Land use

d. Grazing: The project is not located where grazing takes place.

e. Agricultural: Agricultural does not take place on the project site and therefore not affected.

i. Mining and quarrying: Mining and quarrying will not be affected by this project.

2) Recreation

c. Boating: There is no boating activity around the area.

d. Swimming: There is no swimming around the area the project is taking place.

e. Camping and hiking: There is no camping or hiking activity by the project site.

f. Picnicking: This does not apply to the project area.

g. Resorts: There are no resorts in the area by the project.

3) Aesthetics and human interest

e. Unique physical features: No unique physical features are present on this area.

f. Parks and reserves: None in the area of the project to be considered.

g. Monuments: No monuments are located in the project area.

i. Historical or archaeological sites and objects: None are in the area of the project.

j. Presence of misfits: Not applicable to the project.

4) Cultural status

a. Cultural-patterns: Not applicable to the project.

d. Population density: Not a concern in such a low populated area.

6.2.4. Ecological relationships

b. Eutrophication: Not a concern for the projected area.

c. Disease and insect vectors: Not a problem for the projected area.

d. Food chains: Not involved as a concern for the project since not a wide variety of species inhabits there with little complexity to the food chain in the area.
e. Salinization of surficial material: Does not apply to this project.
f. Brush encroachment: Does not apply to this project.

6.3. CEQA Checklist: Non-Applicable Sections

6.3.1 Agricultural resources

This entire section is irrelevant because the proposed site was not used or zoned for agriculture. Additionally, it does not involve any changes in the existing environment which would convert farmland to non-agricultural use.

6.3.2. Cultural resources

This entire section is irrelevant to the proposed project because it does not involve any cemeteries, archaeological resources, historical resources, or geologic features.

6.3.3. Geology and soils

a. This section is irrelevant because the project will not be built on a site that involves landslides or seismic shaking, nor will it involve the rupture of a known earthquake faults.

d. The proposed project site is not located on expansive soil.

6.3.4. Hazards and hazardous materials

d. This section is removed because the project is not located on any hazardous materials sites.

e. This section is removed because there is no public airstrip within two miles of the project site.

6.3.5. Hydrology and water quality

g. There are no houses being built with this project thus this section is not applicable.

j. This project will not be effected by seiches, tsunamis, or mudflows, thus this section is not applicable.

6.3.6. Land use and planning

a. There is no established community in the area of the project, thus this section is not applicable.

6.3.7. Noise

e. There are no public airports near the location of the project, thus this section is not applicable.

6.3.8. Population and housing

b. There are no houses in the existing area, thus this section is not applicable.

c. There will be no construction of replacement housing for the reason that there are no houses in the area. Therefore, this section in not applicable.

6.3.9. Public services

This section was found irrelevant to the proposed project due to the fact that the project will not alter the current performance of any public services.

6.3.10. Recreation

This section is irrelevant to the proposed project because it is not within close proximity to recreational areas, nor will it require the construction or expansion of recreational facilities which might have adverse effects on the environment.

6.3.11. Transportation/Traffic

c. This section is irrelevant to the project because it will not result in a change in air traffic patterns.

g. This section was found irrelevant to the project site due to the fact that the project will not conflict with policies or programs supporting alternative forms of transportation.

6.4. Leopold Matrix: Assessment Results

6.4.1. Environmental actions that most impacted project site

a. Spills and Leaks: Could affect the flora and fauna in the immediate area around the project. The reason for this is due to the fact that more gas and diesel tanks will be installed, creating the risk that they could leak. In addition, more trucks and automobiles will be using this site increasing the risk of gas, oil and other fluid leakage mixing with rain, which could also affect the flora and fauna in the immediate area around the project.
b. Surface Excavation: This action received high negative values based upon the construction work which will take place for the intended project. Surface excavation may modify water quality and flow along with potential erosion with disturbance of soil. This action will alter the current surface area and may disturb any trees, shrubs, grasses and any other flora which is presently in the area. Surface excavation may also hinder wilderness and open-space qualities along with the overall landscape design of the area. Due to these circumstances it is critical to realize that this action may pose negative impacts upon environmental factors within the projects planned area.
c. Alteration of Groundcover: This action received high negative values based upon the construction that will take place which will lead to disturbance and alterations within the area. With altering the groundcover erosion is likely to evolve with compaction and settling of the soil from construction vehicles. Flora such as shrubs and grasses which may currently exist will be impacted negatively through this project. Barriers for both fauna and flora may receive some disturbances along with migration changes in land animals. Upon looking at the impacts associated with altering the groundcover; scenic views, wilderness and open-space qualities, as well as landscape design may be hindered.
d. Liquid Effluent Discharge: Liquid effluent discharge is an outflow of liquid from a sewer or sewage system discharge of liquid waste, as from a factory or nuclear plant. Also the fact that a car wash will be installed and there are lots of detergents used in the car wash.

6.4.2. Environmental items most greatly affected by proposed project

a. Health and Safety: This proposed project received a high negative value for health and safety. It will definitely increase the amount of automobile and truck traffic to the area

which could lead to an increase in traffic accidents. The risk of spills and leaks could increase due to the installation of more gas and diesel tanks. The addition to the site will cause and increase in run off to the oxidation ponds.

b. Erosion: The proposed project received a high negative value for erosion due to several significant actions that will occur. The construction of the traveler's plaza facility will require the excavation, resurfacing, and paving of areas that are currently either gravel or in their natural state. The soil that would naturally absorb the water back into the aquifer will either be compacted or paved over. This increase in paved roads and parking facilities, as well as alteration to the natural landscape, will cause an increase in runoff water. This increase in runoff will ultimately lead to an increase in erosion of the soils in the immediate area of the traveler's plaza.

c. Wetland Areas: The wetland criteria was given a significantly high negative value due to the possibility of damage from the project construction as well as because of the general sensitivity to change inherent in wetland areas. The nature of the project will require a change in water drainage, a decrease in the amount of groundwater recharge, and an increase in liquid effluent discharge. These changes, compounded with the potential for a change in the overall groundwater hydrology and potential for spills and leaks from both vehicles and fueling stations, illustrate why the surrounding wetland area may be negatively affected from the proposed project. These factors combined, as well as looked at individually, have the potential to cause detrimental effects with regards to the quality of the wetland areas.

6.4.3. Project action from proposed project that improves site

a. Landscaping: The proposed project received a positive value for land alteration because it could have a positive impact on the current landscape design of the area. The project is being built on an open field with a field on the south. It would add to the aesthetics of the area by adding more structures to the site because there is already a gas station and a Burger King. This would increase its aesthetic for scenic view as well as its open space qualities by adding something to the barren field.

6.5. CEQA Checklist: Impact Assessment

6.5.1. Aesthetics

a. This project will have no impact on scenic vistas since the surrounding area has already been extensively developed with the construction of the interstate and businesses such as the Burger King and gas station.
b. The proposed project will not substantially damage any scenic resources. Construction of the project will not require the removal of any trees. There are no rock outcroppings or historic buildings on the site. Additionally, there are no Ohio scenic byways in the surrounding area.
c. There will possibly be some degradation of visual character, but it will have less than significant impact. While the water tower will be visible from a distance, the overall scenic quality of the area will not be impacted because the site is already developed.
d. The project would create a new source of light and glare, but the impact will be less than significant. The truck stop will be in operation 24 hours a day, however, the gas station already operates all day and the new truck stop will not be a major source of light.

6.5.2. Air quality

a. This project will not impact any applicable air quality plan.
b. This project will not impact any air quality standards or cause any air quality violations.
c. This project site is not "non-attainment" under any federal or state ambient air quality standards, therefore it will have no impact.
d. Sensitive receptors will be exposed to additional pollution from truck exhaust. However, the expected impacts are less than significant since the concentration of exhaust fumes will not likely be substantial.
e. Emissions from trucks may create objectionable odors to patrons of the surrounding businesses and residents of the area. However, the impact will be less than significant since it is not expected to affect a substantial number of people.

6.5.3. Biological resources

a. While there are two federally listed endangered species and three threatened species in Williams County, none of them lies in the surrounding area of the proposed site. Therefore, there should be no impact on them.
b. The only sensitive natural community found within Williams County is Fish Creek. It will not be impacted by this project. There is a regional plan for riparian habitat: the St. Joseph River Watershed Initiative. Since the truck stop stormwater will run into this watershed, the initiative will be concerned about it. However, since the project is five miles away from Eagle Creek—which is part of the St. Joseph River Watershed—the impact will be less than significant.
c. The project will not impact federally protected wetlands because there are none in the area.
d. The project will not impede the use of any native wildlife nurseries, but it may have an impact on the movement of ground animals and bird migration patterns. The parking lot, buildings, and fencing can impede ground animals, while the water tower and lights can interfere with bird navigation. However, since the site has already been developed, there should be a less than significant impact because the area is already disturbed.
e. This proposed project will not interfere with any local policies protecting biological resources.
f. This proposed project will not conflict with any habitat conservation, natural community conservation, or other conservation plans.

6.5.4. Geology and soils

b. There will be a less than significant impact for soil erosion and loss of topsoil. While there will be site digging for the project, it will be minor and is not expected to cause a substantial amount of erosion.
c. The ground of the proposed project site is stable and will remain stable after the project is built. Additionally, there is no chance for on or off-site landslides or soil liquefaction.
e. The site's soils are capable of supporting the use of septic tanks, therefore, there will be no impact.

6.5.5. Hazards and hazardous materials

a. There will be a potentially significant impact from the routine transport, use, and disposal of hazardous materials through the area. Trucks often carry hazardous materials through the area. An increase in truck traffic increases the odds of an accident which could affect the public.
b. There will be a potentially significant impact from the release of hazardous materials into the environment because of accidents. A release of any hazmat could be detrimental to people and wildlife in the region.
c. There will be no hazmat release dangers to schools because there are no schools within one quarter mile of the proposed project site.
f. There will be no impact for this section. While there is a private airstrip within the area, the proposed project will not cause any safety hazards for people working or residing in the area.
g. This project will not impact any emergency response plans.
h. While an explosion at the gas station could lead to a fire, the relative remoteness of the area and lack of a nearby residential area means it would be a less than significant impact.

6.5.6. Hydrology and water quality

a. There will be no impact for this section. The gas station will use the existing wastewater treatment facility which meets all water quality standards and waste discharge requirements.
b. The impact of the two wells on site will be less than significant. They will be built on a large aquifer that can yield the pumping of 100 to 500 gallons per minute. These wells will pump up to 100 gallons per minute.
c. The drainage pattern of the site will not be altered, thus, not causing alteration to the course of Eagle Creek. There will also not be any substantial erosion or siltation.
d. This project will not alter the existing drainage pattern of the area, therefore, there will be no impact.
e. This section will have no impact because this project will not contribute to excess runoff water that would create additional sources of polluted runoff.

f. There will be a less than significant impact on the water quality of the surrounding area. There will be an increase of oil and other substances running off the pavement but not enough to substantially degrade the water quality.

h. This project is not being built in a 100 year flood zone, thus will have no impact on flood flows.

i. Any flooding occurring on or near the site of the project will not have any impact on the well being of the people using the facility.

6.5.7. Land use and planning

b. There is no impact for this section because the proposed project will not conflict with any land use plans intended to avoid environmental effects.

c. There is no impact for this section because the project will not conflict with any habitat or natural community conservation plans.

6.5.8. Mineral resources

a. There are no known mineral resources that would be of value to the region on this site. Therefore there will be no impact in the loss of mineral resources.

b. There are no known locally-important mineral resources on this site in which this proposed project would impact a local general recovery plan, specific plan or other land use plan.

6.5.9. Noise

a. Since there are no noise level standards established in the area, the proposed project will have no impact on these criteria.

b. The increase of trucks will have no impact on a person's exposure to or generation of excessive ground borne vibration or ground borne noise levels. This is due to the project already being close to a public restaurant and gas station as well as being close to the Ohio Turnpike.

c. The increase of trucks in the area will have a less than significant impact on the permanent increase in ambient noise levels in the project vicinity above levels existing without the project. This is due to the project already being close to a public restaurant and gas station as well as being close to the Ohio Turnpike.

d. There will be a less than significant impact on the temporary or periodic increase in ambient noise levels in the project vicinity above the levels existing without the project. Though there will be an increase in the amount of trucks there will not be a substantial increase due to the project already being close to a public restaurant and gas station as well as being close to the Ohio Turnpike.

f. There is a private airstrip within a few miles of the project but does not have excessive use, thus the noise level will have no impact to the people residing or working in the project area.

6.5.10. Population and housing

a. The project may span very little growth around the area, possibly other small businesses due to the location near the turnpike and the increase in traffic flow because of the project, however the impact will be less than significant.

6.5.11. Transportation/Traffic

a. An increase in traffic was said to be less than significant with mitigation incorporation. A traffic light will be placed at the intersection closest to the project site.

b. This section will have no impact because the project will not exceed any road congestion standards.

d. This section has a potentially significant impact because of the surrounding community and the exit off of the Ohio Turnpike. There are slow-moving farm vehicles in the area, as well as a dangerous intersection where Route 40 meets the Ohio Turnpike. All of these will likely be impacted by increased truck traffic.

e. This section will be less than significant with mitigation incorporation. In the case of an emergency the current entrance and exit to the project site would be inadequate for emergency vehicles. Several larger entrances and exits would be needed to mitigate this issue.

f. This project will not negatively impact parking capacity due to the fact that the project itself includes creating a larger parking lot.

6.5.12. Utilities and service systems

a. This section will have no impact due to the fact that the project developers have a waste water treatment facility on site capable of processing future wastewater from the proposed project.
b. This section is less than significant impact because the in the future other water treatment facilities may be needed but, as of now, the current water treatment facilities are capable of treating all waste water.
c. This project will not require the construction of new storm water drainage facilities, as it is already designed to hold the predicted runoff. Therefore, this section is no impact.
d. This section is no impact because no new or expanded water entitlements will be needed. There is a sufficient water supply available for the project.
e. There will be no impact because the project site has a waste water treatment facility capable of processing future wastewater from the project.
f. There is no impact for this section because it is already served by a landfill capable of accommodating the proposed projects solid waste needs.
g. There is no impact because the project will comply with all statutes regarding solid waste regulations.

6.5.13. Mandatory findings of significance

a. While the project has the potential to degrade the surrounding environment, the impact is likely to be less than significant because there is already development on the site. Additionally, the only impacts to wildlife will likely be within the boundaries of the project site. No endangered and threatened species will be impacted by this project.
b. This proposed project does not have any impacts that are cumulatively considerable. While there are some components of the local environment that will be impacted, they will not substantially degrade the environment of Williams County.
c. This project will not have environmental impacts that will adversely affect human beings. Since there are no residences near the project, any environmental effects will not directly impact any people living nearby.

Section 7. Methods Used to Evaluate Alternatives

One technique used to compare alternatives once their environmental impact has been assessed is the Adkins-Burke Checklist. The Adkins-Burke Checklist is an impact-rating checklist which allows for the comparison of multiple alternatives based on user-defined categories such as in this case, transportation, environment, society, and economy (Canter 1994). Each category is then broken down into more specific factors that will be impacted. For each factor, the alternatives are given a positive, negative, or zero ranking depending on what the expected impact will be, with positive ratings meaning there will be a positive impact; negative meaning a negative impact; and zero meaning no impact (Canter 1994).

A ranking system of +3 to -3 is used for the purpose of this report with +3 being the most beneficial impact and -3 being the most detrimental impact. Once all of the factors are rated for each alternative, a comparison of the alternatives can be made. The number of positive and negative ratings for both the action and no action alternative are tallied. Then, the algebraic sums of the ratings for each alternative are calculated. Next, the ratio of positive to negative ratings and the average of rating (algebraic sum divided by total number of ratings) are found. Comparisons can then be made between the alternatives using these five aspects.

Based on the actual ranking of the alternatives (see Tables 3 and 4), the best alternative available is Alternative 1, the original proposed project.

Table 3: Summary of Alternative Ratings for Traveler's Plaza

	Alternative	
	1 (action)	**2 (no action)**
Number of positive ratings	**5**	3
Number of negative ratings	10	**5**
Ratio of positive ratings	0.33	0.33
Algebraic sum of ratings	**-3**	-5
Average of ratings	**-0.20**	-0.56

Table 4: Adkins-Burke Checklist for Traveler's Plaza

Factor	Description	Alternative 1	Alternative 2	Comment
A: Success in meeting defined needs and criteria.		+3	-3	Taking the no action alternative will not fulfill project goals.
B: Economic Cost/Benefit				
1. Jobs	Increase in jobs	+3	+1	The action of this project will create 65 new full time jobs
2. Local development	Boost in the development for the area	+3	+1	The action alternative will open up other property owned for further development of the interchange
3. Tax revenue	Increase in tax revenue	+3	+1	The increase of jobs and business will increase tax revenue
4. Maintenance of roads	Cost and labor to maintain roads	-2	0	Due to increased traffic more maintenance will be needed
5. EMS	Cost and labor for additional police, fire, ambulance, etc.	-2	0	The action of this project will increase the needs and cost for EMS
C: Environmental Impacts				
1. Water quality/drainage	Increase contaminants from storm water and runoff	-1	0	There will be runoff from parking lots carrying chemicals and fuel
2. Water quantity	Water withdrawals from aquifer	-1	0	100 gal/min will be taken from the groundwater aquifer; it can handle 500gal/min
3. Emissions	Amount of pollution generated by trucks visiting area/vapors released by pumps	-2	-1	Taking no action would not increase the number of trucks using the station
4. Noise	Noise impacts from trucks for nearby residents	-2	-1	Taking no action, the increase in truck traffic would not be an issue
5. Visual impacts	Increase light from gas station and more building structures	-1	0	Action would increase development, including a high rise structure
6. Spills and leaks	The likelihood and consequences of any fuel/chemical leaks or spills	+1	-1	No action was given a negative rating because the action alternative will require the fueling station to update its technology for controlling spills and leaks
7. Habitat	Loss or gain of habitat/implementation of non-native species	0	0	Habitat loss will be minimal
D: Safety				
1. Spills and leaks	Likelihood of potential fuel leaks and/or spills	-1	0	The likelihood of a leak or spill is increased by the action alternative because increased traffic and more fuel tanks will be added
2. Traffic	Increase in traffic accidents due to potential increase in traffic	-2	-1	Action will increase the amount of traffic flow thus increasing accidents
3. Explosions	Likelihood of potential explosions	-2	-1	The likelihood of an explosion/accident is increased by the action alternative because more fuel tanks will be added

Rating Scale: -3 to +3; -3 being the worst rating, 0 being neutral, +3 being the best rating.

Section 8. Mitigation Measures

According to the impact assessment carried out using the CEQA Checklist and the Leopold Matrix, some adverse environmental impacts will be created during the construction and operation of the traveler's plaza. Several of these impacts can be avoided, minimized, reduced, or eliminated with mitigation measures. In this section, several necessary and suggested mitigation measures are discussed.

Surface or Paving:

Regulate operations, which periodically may cause fugitive dust emissions into the atmosphere.

Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, construction of roadways, or the clearing of land.

The scope of many development projects requires the importation and exportation of soil. The exportation of soil from project sites, while controlling dust and debris track-out to public roadways, may be a problem which needs to be addressed. To mitigate potential impacts of fugitive dust emissions due to paving during construction of the truck stop, the following mitigation measures could be implemented:

- From inactive sites and soil stockpiles through the use of stabilizers and suppressants,
- During construction through use of on-site water trucks and track-out controls,
- During construction and hauling by employing full-time, on-site monitors
- By restricting activity during periods of high wind.

On-Site Water Trucks

Water trucks provide on-site control of fugitive dust while soil is being moved or disturbed. The frequency of watering is increased as construction activity increases or when visible emissions extend beyond the site.

Track-Out Controls

Track-out controls prevent dust from being spread to public streets by trucks entering and leaving construction sites, and include:

- Asphalt paving at driveway access points.
- Sweeping or spray-cleaning trucks prior to leaving the site.
- Covering the truck with a tarp and maintaining the required freeboard clearances keep excessive dust from escaping the truck during hauling operations.
- Limiting on-site vehicle speeds to 15 MPH to prevent dust emissions caused by truck travel on unpaved construction sites.

Mitigation Measures when Wind Gusts Exceed 25 MPH

When wind gusts exceed 25 MPH, it is considered to be a high wind condition. Under high wind conditions, fugitive dust from construction activity, particularly truck hauling, becomes a problem. To address this:

- All trucks should be covered with a tarp, or
- All hauling operations should be stopped until wind conditions permit.

Oil/Water Separator (O/WS)

Runoff water from parking lots usually contains many contaminants (e.g. fuel, oil, coolant, etc.), most of which cannot be effectively removed from the sewer system before they enter a publicly owned treatment works (POTW). Governed under the Clean Water Act's "National Pollutant Discharge Elimination System Permit Program", the Pollution Protection Act, and through locally established limits for discharge into POTW's, the project has certain applicable discharge standards that it must adhere to. These standards set forth limits on the amount of allowable contaminant discharge into the local sewer systems. Furthermore, according to the Pollution Prevention Act's "P2 hierarchy", the project should adhere to a philosophy which requires, "that pollution first be prevented whenever feasible. If it cannot be prevented, it should be recycled. If it cannot be prevented or recycled, it should be treated and/or rendered non-polluting in an environmentally safe manner."

Oil/water separation is a process used to remove the oil contaminant from various sources of contaminated water. For the traveler's plaza project, the oil/water separation will

be used for contaminated parking lot runoff that is being discharged into the local sewer system. To mitigate the effects of the increased amount of oil contaminant due to the increased traveler's plaza traffic, we are proposing the implementation of an oil/water separation system. The oil/water separator (O/WS) is a device used to separate oil, grease, and large particulates from waste streams and stormwater discharges.

There are two main types of O/WS's; gravity separators (Figure 12) and coalescing separators (essentially enhanced gravity separators). The success of an O/WS is determined by the amount of contaminated water being separated, the concentration of said water, and the proper maintenance of the O/WS. Deciding on what type of O/WS is needed for the project requires an assessment of the particular data regarding levels of contaminants and the amount of water to be treated. An O/WS that is too small for the amount of water to be treated, or one that is improperly maintained, can significantly pollute surface and groundwater

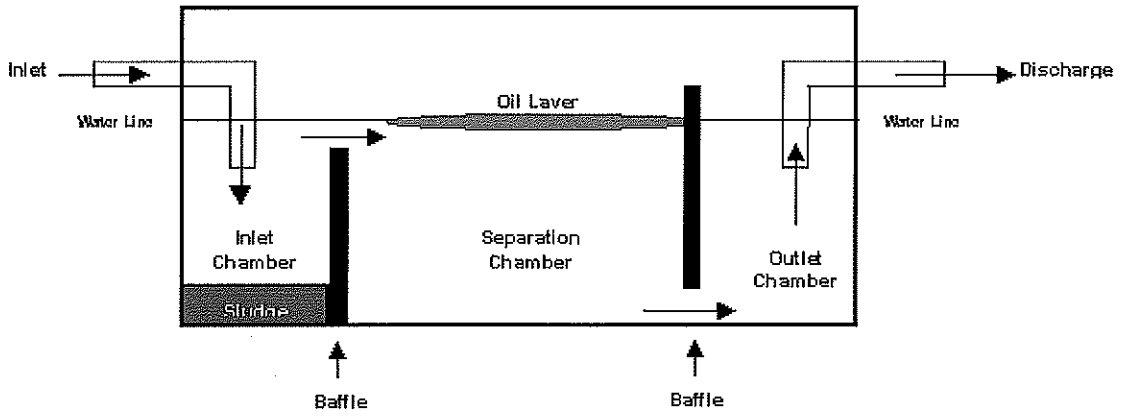


Figure 12. Gravity Oil/Water Separator

Figure 13 shows an O/WS flow chart to assist in the proper design process for implementing an O/WS for the traveler's plaza project.

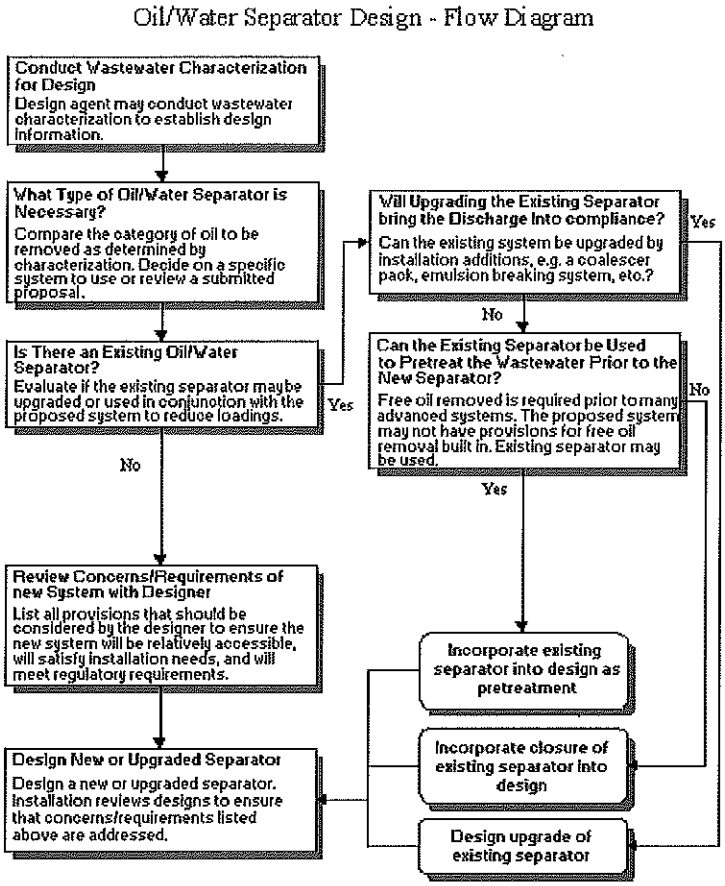


Figure 13. Oil/Water Separator Flow Design

Traffic

Due to the increase in truck traffic associated with this project there is the potential for increased accidents. One mitigation option is to install stop lights off of the exit and on ramps from the turnpike onto State Route 49. This is an area where truck drivers find it difficult to see oncoming traffic and therefore have to pull out into the intersection. Stop lights would reduce the amount of vehicle accidents that could occur due to the increase in truck traffic to the traveler's plaza.

Another mitigation measure that may be necessary is the widening of the current entrance to the truck stop. As it currently is, the entrance is very narrow and difficult for trucks and cars to share the same space. A wider entrance would allow for cars to flow freely in and out of Burger King as well as the Mobil gas station. It may even be beneficial to locate the entrance at another location and limit the interaction of automobiles and trucks.

Drainage

Water runoff may result in erosion, sedimentation, and compaction and may damage surrounding or adjacent property and roads. The use of Best Management Practices (BMP) minimizes discharge to the storm sewer systems and controls runoff quality to the maximum extent. Certain BMPs help provide and better control environmental features like shallow marshes and wet ponds, which increase water fowl, and allow settling of sediments before entering bodies of water. BMPs can also prevent flooding, by retaining large amounts of water and releasing them slowly.

The use of extended detention ponds allows incoming stormwater to replace pond water. When the pond water flows out, the new water is stored in the pond until the next storm. This system enables many of the runoff pollutants to settle to the bottom of the pond, preventing pollutants from entering the river, but provides minimal flood protection.

Infiltration basins capture storm water and store it until some, or all of the storm water filters into the surrounding soil. This system is effective for removing fine-grained pollutants before re-entering the water table.

Porous pavement such as interlocking tiles or bricks, allow storm water runoff to infiltrate the pavement and enter the soil, providing erosion control. Use of silt fences in construction areas reduces erosion, surface scouring, and discharge to water bodies.

Cut and fill

Use of silt fences in construction areas reduces erosion, surface scouring, and discharge to water bodies. Tarps can be used over excavated materials to lessen the chance of erosion and sedimentation.

Liquid Effluent Discharge

Liquid effluent discharge runs through the wastewater treatment plant located across the street, once treated the water can be recycled or discharged into a body of water.

It may be necessary to assess the background flow and water quality of the receiving water body. The identification of downstream users and their specific water quality needs may also be necessary. Characterization of the treated effluent quality in terms of the critical water quality variables such as dissolved oxygen, and ammonia may also be required. As well

as the computer simulation of the probable downstream impacts associated with the effluent discharge.

Landscaping

Paving and surface excavation may reduce the aesthetic value as well as increase surface runoff and erosion of the site. By building the truck wash, paved parking lot and road, water treatment facility and water tower on the site, water is unable to permeate into these ground surfaces, increasing runoff into the drainage catchment, which may later affect Eagle Creek. Also, when there is surface excavation, ground cover is altered; causing the soil to become looser and erosion to occur more frequently. A simple solution to decrease the amount of stormwater runoff would be to implement landscaping, such as shrubs, trees, or flower beds (Parris 2004). The vegetation planted would collect the runoff from the impermeable surfaces and use it as a water resource. In addition, the planting of indigenous vegetation will provide a natural and aesthetic alternative to soil erosion protection as the roots from the native plants will serve as a strong hold in the soil (Comoss 2002).

Air Pollution/Truck Stop Idling

One of the main problems with the construction of a truck stop is truck idling. Truck drivers are federally required to receive 8 to 10 hours of rest each day (Richard 2005). During these resting periods, drivers leave their engines idling in order to power heaters, air conditioners, refrigerated trucks, lights, and appliances such as televisions, microwaves, and computers. The problem is that idling engines produce air and noise pollution. A possible mitigation plan is to use truck stop electrification to provide electricity, cable, internet, and phone service to replace engine idling (South Coast Air Quality Management District 2001, West Coast Collaborative 2005). Truck stop electrification (TSE) uses individual stationary or mobile systems for each individual space to provide electricity through grid based power, small engines, or auxiliary deep cycle battery packs (Oregon Solutions 2005). This would have many potential benefits such as reduce emissions and therefore air pollution, decrease noise pollution, increase safety, save energy, and save money. Using TSE would reduce 90,000 metric tons of carbon dioxide over a period of 16 years as well as other smog-forming emissions (Richard 2005). Besides reducing neighborhood noise pollution, safety would be

improved since drivers would be able to sleep better without the noise and vibrations (Richard 2005). About one percent of all imported petroleum is used by idling engines at a rate of about one gallon per hour, so by switching to TSE millions of gallons of fuel could be saved each year (Oregon Solutions 2005). This would in turn help drivers save money in fuel. The cost of installing TSE would be about $2,500 per space but would be gained back by selling the electricity at a certain price per hour and could potentially repay itself in 5 to 16 years (Oregon Solutions 2005, Richard 2005, West Coast Collaborative 2005).

Noise Pollution

When dealing with excessive noise, there are several types of mitigation that can be used. One example is to build walls around the problem area. This would lead to a dramatic reduction in noise levels to residents that live near the proposed truck stop. Also to reduce the noise on nearby residents the developers could purchase all of the surrounding land to create a buffer zone. This buffer zone prevents anyone from building close to the truck stop. With an open space between residents and the truck stop, high levels of noise from the trucks will not be a problem. Other type of mitigation possible to combat the noise problem is vegetation. Planting vegetation that is tall, wide, and dense will also deafen the sound that is leaving the truck stop. This mitigation will deafen the sound, but will also have a positive visual impact on the area. Picking the right mitigation measure depends on how much noise reduction is required and the cost of the mitigation implemented.

Alteration of Groundcover

One can mitigate the effects of altering groundcover by replacing vegetation on various sites around the parking lot through active or passive revegetation. Active revegetation entails planting plants and perhaps installing an irrigation system in worked areas around the project site for aesthetic or environmental reasons. Passive revegetation is letting nature restore itself. It entails the least amount of expertise and work, although it may take years to see any positive results.

Section 9. Conclusion

Several environmental items could be impacted by the development of the traveler's plaza. The existing wastewater treatment facility effluent is released into Eagle Creek and increased runoff due to enlarged impermeable areas may affect the ecology of the creek. Noise and air pollution due to increased truck traffic may affect nearby residents. Air pollution can be harmful to human and the environment, while noise pollution can reduce the quality of life for nearby organisms. The aesthetics of the current site are already impacted as the area is mostly developed.

This study indicates that the proposed project may have one significant impact and several less than significant impacts. The area of hazards and hazardous waste was found to be a possible significant impact, but if they are transported and handled according to guidelines, and safety devices are implemented, this impact would be largely reduced. The areas indicated as less than significant, which include soil erosion, water quality, air quality, noise pollution, safety, and aesthetics, could have their impacts minimized with the use of proper mitigations described in Section 8.

Section 10. Recommendations

The Environmental Impact Statement class recommends proceeding with the construction of the proposed traveler's plaza. We believe that if the proper mitigations are installed through out the construction and operation process, there should be no serious effects to the environment or to the health and safety of the inhabitants of the area. The economic gains from this project will most certainly outweigh the properly mitigated environmental impacts that have been found in this study.

Section 11. Interest Groups and Agencies

There are several agencies and interest groups that have awareness and authority of this project. These would include the Williams County Engineer that would review the proposal and/or changes in storm water drainage and wastewater treatment facility. The Williams County Auditor would be the source for a building permit. The Williams County Health Department would be in charge of the health permit and inspect or review plans of system design.

The ODOT Williams County would have interest and comment on traffic congestion, roads, and highways. Other potential groups that would be interested in this project would be the Turnpike Commission, Northwest Township Clerk/Trustees, Williams County Soil and Water, Ohio EPA, interested managers of industries within the area, and concerned individuals of Edon and surrounding towns.

From this list of potential reviewers some are consulted experts and others are just simply those people who will be invited to review and comment on the DEIS. The primary means by which these various parties will be contacted is through email, telephone, letters and through ads in the local newspapers.

Plans and Polices of Northwest Township

Zoning Development Plan

General Zoning

The land being developed for the Quadland construction project does not need to be re-zoned for the development of the traveler's plaza. To the best of our knowledge, the property that the development will occur on was not zoned for agricultural use prior to the decision to develop the area. The property had been sitting undeveloped for a number of years prior to the decision to proceed with the project at hand.

Township Zoning Permit

Northwest Township, where the construction project will take place, is not a zoned township and therefore the developers are not required to submit a building permit for said township.

Commercial and County Building Permits

It can be properly inferred from the fact that construction on the site has already commenced that the involved entities have followed the proper certification process for development in Williams County, Ohio with regards to Ohio Revised Code 5713.17. This process involves contacting the County Auditor with a written request for new construction projects exceeding $2,000. For all industrial and commercial developments, the County Auditor's office outlines the following 3-step process for successful permit acquisition (it can further be inferred that since the project is already underway that all steps have already been followed):

1. Call 1-800-686-6930 Northwest District Office of the Ohio E.P.A. for non-residential sewer systems and for water systems serving 25 or more individuals or has more than 15 service connections.
2. Call 1-800-523-3581 Ohio Industrial Relations (Commercial Building Permits)
3. Go to Williams County Courthouse Auditor's Office, 2nd Floor, 636-5639 (County Building Permits)

Land Use Plan

After several attempts to contact the Williams County Auditor, it can be inferred that the lack of response to inquires regarding short and long-term land use planning shows that the county lacks such a comprehensive plan. Further inference based on significant research shows that no land use planning exists other than the required zoning and permitting process as outlined in the previous section.

Air Quality Plan

Williams County

The Williams County Board of Health was contacted and was informed that they lack any county specific air quality plan or testing mechanisms, but that they follow all applicable Ohio Environmental Protection Agency (OEPA) standards. The Williams County Board of Health representative, Jean Wise, stated further that any air quality issues arising in Williams County are referred to, and resolved by, the OEPA.

Ohio Environmental Protection Agency Codes/Regulations

The major air quality issue regarding the travel plaza is the requirement that all gasoline distributing facilities obtain the proper permits under Ohio Administrative Code OAC 3745-31-03(A)(4). Said Code contains a Permit-By-Rule Exemption for these types of distribution facilities. Whereas most polluting facilities are required to obtain a Permit to Install (PTI) and a Permit to Operate (PTO), as long as our traveler's plaza meets all of the requirements for the PBR exemption, the PBR will function as both the installation and operating permit for the source (i.e. the gas distributing facility). It should be noted that a source operating under a PBR is still subject to general air pollution provisions such as OAC 3745-15-07 Air Pollution Nuisances Prohibited.

With regards to the travel plaza construction, the project also is required to acquire a permit pertaining to "Paved Roadways and Parking Areas". The project needs to be permitted through the OEPA, but with consideration that the project has already commenced and is being undertaken by competent contractors, it can be properly inferred that the permitting process has already been undertaken.

Local Wildlife Policies/Conservation Plan for Williams County, Ohio

The Division of Wildlife district office claimed that there are no specific wildlife policies for Williams County; however, the county does follow the state wide wildlife policies implemented in the strategic plan for the Department of Natural Resource Division of Wildlife.

State Wildlife Policy

The ownership of and the title to all wild animals in the state, not legally confined or held by private ownership legally acquired, is in the state, which holds such title in trust for the benefit of all the people. Individual possession shall be obtained only in accordance with the code or Division of Wildlife orders. No persons shall at any time take in any manner or possess any number or quantity of wild animals, except as the code or Division orders permit to be taken, hunted, killed or possessed, and only at such time and place, and in such manner as prescribed. No person shall buy, sell, or offer any part of wild animals for sale, or transport any part of wild animals, except as provided. No person shall possess or transport a wild animal taken unlawfully outside the state. A person doing anything prohibited or neglecting to do anything required by this chapter or Chapter 1533, or contrary to a Division order violates this section. A person who counsels, aids, shields or harbors an offender, or who knowingly shares in the proceeds of such violation, or receives or possesses a wild animal in violation of code or order violates this section. No person shall hunt a wild bird or wild quadruped, except coyotes, fox, groundhogs or migratory waterfowl as defined by federal statute on Sunday or use a rifle, at any time, in taking migratory game birds (1531.02).

Habitat Protection

No person shall place or dispose of garbage, waste, vegetable peelings, fruits, rubbish, ashes, cans, bottles, wire, paper, boxes, automobile parts, furniture, glass, oil or anything else of an unsightly or unsanitary nature on state-controlled land or in a ditch, stream, river, lake or pond, except those which do not effect a junction with natural surface or underground waters, or upon the bank thereof, where same is liable to be washed into the water by flow or flood, except by permit or exemption issued under 6111.04 (1531.29). No person shall locate, place or maintain in state waters an obstruction to the natural transit of fish.

Endangered Species

Ohio has separate endangered species laws to protect animals and plants (Ohio Rev. Code Ann. §§1531.25, .26; 1531.99). Under both laws, listings are based on scientific criteria. Neither law requires recovery plans, critical habitat designation or agency consultation.

Section 12. List of Preparers of Draft EIS Report

Neil Clark	Approach and considerations Plans and policies Leopold Matrix actions and environmental factors that were removed Mitigation: Oil/water separator Adkins-Burke
Katy Goebel	Previous/current uses Aerial photos Interest groups Leopold Matrix actions and environmental factors that were removed Mitigation of traffic Adkins-Burke
Blake Hairston	Environmental settings: Soils and geology Co-wrote the action alternative CEQA pages 10-11 Mitigation for alteration of groundcover Alteration of groundcover
Erin Hammer	Environmental settings: Project and site description Co-wrote the no-action alternative CEQA pages 4-5 Mitigation for air pollution at the truck stop Air pollution/Truck stop idling
Steve Hug	Environmental settings: Noise Co-wrote the no-action alternative CEQA pages 6-7 Mitigation for noise problems at the truck stop Noise pollution

Lisa Owen	Air pollution Agencies Leopold Matrix actions and environmental factors that were removed Mitigation for drainage, cut and fill, liquid effluent discharge Adkins-Burke
Cody Marshall	Environmental settings: Surface water and some groundwater Co-wrote the action alternative description CEQA write-ups pages 8-9 Mitigation for surface excavation
Ron Rice	Wildlife and vegetation Leopold Matrix actions and environmental factors that were removed Plans and policies Mitigation for surfacing and paving Adkins-Burke

Bibliography

AEP, Permits, Canton, Ohio, 2005.

Canter, Larry W., Environmental Impact Assessment, 2nd ed., New York, NY: McGraw-Hill, 1996.

Community Development Department Building Division, City of Burbank, Burbank, CA. <http://www.burbankca.org/building/pdfs/dustbro1.pdf#search='surface%20paving%20mitigation%20dust'>. (6 November 2005)

Comoss, E. J.; D. A. Kelly; H. Z. Leslie, Innovative Erosion Control Involving the Beneficial use of Dredge Material, Indigenous Vegetation and Landscaping along the Lake Erie Shoreline, *Ecological Engineering*, 19, 203-210, 2002.

The Falconer Group, DUSEL, Cascades Pre-proposal, Seattle, WA, 2004.

Federal Highway Administration, Highway Traffic Noise in the U.S., Washington, D.C., 2000.

MDOT, Structural BMP's, Detroit, MI, 2005.

Maumee Valley Planning Commission, email responses from Dennis Miller, October 25 and November 26, 2005.

National Park Service (NPS), Marine Mammal Center Site and Facilities Improvements, San Francisco, CA, 2004.

National University of Rosario, Sound Levels, Argentina, 2004, <http://www.eia.fceia.unr.edu.ar/~acustica/biblio/soundlev.htm>. (15 November 2005)

North Carolina Department of Environment and Natural Resources, Division of Pollutant Prevention and Environmental Assistance, Oil/Water Separators, Raleigh, NC, 1999, <http://www.p2pays .org/ref/07/06019.htm>. (1 November 2005)

Ohio Administration Code, Ohio Water Quality Standards: Use Designation for Maumee Drainage Basin, Columbus, OH. (6 November 2005)

Ohio Department of Natural Resources, Division of Water Publications, <http://www.dnr.state.oh.us/water/gwrmaps/counties/williams>. (6 November 2005)

Ohio Department of Natural Resources, Division of Wildlife, Strategic Plan 2001-2010, Columbus OH, March 2001.

Ohio Division of Natural Resources, <http://www.dnr.state.oh.us/wildlife/pdf/pub323.pdf> (29 October 2005)

Ohio Environmental Protection Agency, Ohio Administrative Code Chapter 3745-31-03, Columbus, OH, 2005, <http://www.epa.state.oh.us/dapc/regs/3745-31/31-03.pdf>. (29 October 2005)

Ohio Environmental Protection Agency, Ohio Administrative Code Chapter 3745-15-07, Columbus, OH, 2005, <http://www.epa.state.oh.us/dapc/regs/3745-15/3745_15.html>. (29 October 2005)

Ohio Environmental Protection Agency, Northwest Branch, Interview with Dan Glomski, October 17, 2005, Bowling Green, OH.

Oregon Solutions, Reduced Engine Idling at Truckstops: Drafting a Declaration of Cooperation, 2005, <http://www.orsolutions.org/docs/Truckstops_DOC.pdf>. (1 November 2005)

Parris, T. M., Managing Stormwater, *Environment*, 46, 3-3, 2004.

Permit Place, State, County and Local Building Permit Information, Los Angeles, CA, 2005.

TR Information Publishers, *The Trucker's Friend Online*, Clearwater, FL, 2004, <http://www.truckstops.com/>. (5 November 2005)

Richard, Michael G., Truck Stop Electrification to Fight Pollution, 2005, <http://www.treehugger.com/files/2005/10/truck_stop_elec.php>. (3 November 2005)

Scorecard, Pollution Locator: Smog and Particulates: County Report, 1999, <http://www.scorecard.org/env-releases/cap/county.tcl?fips_county_code+39171>. (3 November 2005)

South Coast Air Quality Management District, AQMD Adopts Measure to Reduce Diesel Truck Stop Emissions, 2001, <http://www.aqmd.gov/news1/2001/Bs11_09_01.htm>. (3 November 2005)

TadN Arundo Eradication Program, Revegetation/Restoration Plan Guidelines, 2003, <ceres.ca.gov/tadn/eradproject/reveg_restor_guidelines.pdf>. (3 November 2005)

Transportation Research Board (TRB), Landscape and Environmental Design, Topeka, KS, 2002.

Tri-State University, Tri-State Economic Profile, Angela, IN, 2004, <http://www.tristate.edu/TSEP/williams.co.html#weather>. (20 November 2005)

U.S. Department of Agriculture Soil Conservation Service, Soil Survey of Williams County Ohio, U.S. Government Printing Office,1978.

U.S. Department of Transportation, Federal Highway Administration, Rest Area Forum: Summary of Proceedings, Washington, D.C., December 1999, <http://www.tfhrc.gov/safety/00034.pdf>. (5 November 2005)

U.S. Environmental Protection Agency, Best Environmental Practices for Auto Repair and Fleet Maintenance, EPA Region 9, 1999, ,http://www.epa.gov/region09/cross_pr/p2/autofleet/factauto.html>. (25 October 2005)

U.S. Environmental Protection Agency, National Center for Environmental Assessment. Health Assessment Document for Diesel Engine Exhaust, <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm>. (25 October 2005)

Welcome to Williams County, Williams County Engineer, Williams County, Ohio 2005. Williams County Auditor's Office, Building Permits, Williams County, Ohio, 2005, http://www.co.williams.oh.us/auditor/bldg_permitsnew_const.htm. (6 November 2005)

West Coast Collaborative, Diesel Emissions Mitigation Opportunities, 2005, <www. westcoastdiesel.org/files/outreach/Diesel%20Emissions%20Mitigation.pdf>. (1 November 2005)

Williams County Courthouse Abstract Index, 2 Northwest 1994, Bryan, OH, 2005.

Williams County Engineers Office, email response from Denny Bell, Bryan, OH, November 8, 2005.

Appendices

State and Federal Coordination

OHPO COORDINATION

Dennis Miller

From: Dennis Miller
Sent: Wednesday, June 3, 2020 11:57 AM
To: Stephen Biehl
Subject: Additional work at the Northwest Water District Plant located at I80?90 and SR 49 in Williams County
Attachments: 20200603115854630.pdf

Stephen:
Williams County is proposing to assist the Northwest Water District located in Northwest Township in Williams County. The commissioners will be utilizing CDBG Revolving Loan Funds to finance the project. The total cost of the project is estimated at $57,000. We originally constructed this water plant with CDBG funds by in 2007. I have attached correspondence from Tim Allen, who was the OHPO Reviewer at the time. I have also included the Phase I Survey. The additional work will be performed within the footprint of the original survey area. It will include the reconstruction of a wastewater discharge sewer and the installation of a manhole. Tim Allen indicated that I should consult with you regarding the additional work. Please contact me if you have additional questions.
Thanks
Dennis

July 18, 2007

Marsha Kolb
Maumee Valley Planning Organization
1300 E. Second Street, Suite 200
Defiance, Ohio 43512-9918

Dear Ms. Kolb:

RE: Section 106 Review
Williams County CDBG Economic Development
Flying J Travel Plaza Development, Northwest Township, Williams County

This is in response to the receipt, on June 27, 2007, of *Phase I Cultural Resource Management Survey of a Proposed 9.29 ha (22.96 a.) Water Facilities in Northwest Township, Williams County, Ohio*, by Kevin A. Nye and Craig S. Keener. This report documents the results of an archaeological investigation associated with the installation of two supply wells, a water treatment facility, an elevated storage tank, and associated distribution lines on a 22.96-acre parcel. The proposed water facilities are associated with the proposed development of a Flying J Travel Plaza on an adjacent 37-acre parcel. My comments are made in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended, the associated regulations at 36 CFR 800, and the Programmatic Agreement between the State of Ohio Department of Development and the Ohio Historic Preservation Office.

Intensive investigation of the 22.96-acre project area did not identify any archaeological remains. Therefore, based on the information provided, I agree with the authors' recommendation that no further archaeological work is necessary in the proposed project area. It is my opinion that the proposed Flying J Travel Plaza Development project, as described, will not affect historic properties. No further coordination is required unless the scope of the work changes or archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as per 36 CFR 800.13.

If you have any questions, please contact me at (614) 466-2285, or by email at tmallen@odod.state.oh.us.

Sincerely,

Timothy M. Allen, Environmental Specialist
Office of Housing and Community Partnerships

c: Mark Epstein, OHPO

OHIO DEPARTMENT OF DEVELOPMENT

Ted Strickland
Governor

Lee Fisher
Lt. Governor
Director, Ohio Department of Development

May 8, 2007

Will M. Burns
Maumee Valley Planning Organization
1300 E. Second Street, Suite 200
Defiance, Ohio 43512-9918

Dear Mr. Burns:

RE: Section 106 Review
Williams County CDBG Economic Development
Flying J Travel Plaza Development, Northwest Township, Williams County

This is in response to your correspondence, received April 19, 2007, regarding the proposed CDBG Economic Development project in Northwest Township, Williams County. This project involves the development of a Flying J Travel Plaza on a 37-acre parcel in the northeast quadrant of the intersection of the Ohio Turnpike and SR 49. The project also includes the installation of two supply wells, a water treatment facility, an elevated storage tank, and associated distribution lines on an adjacent 22.96-acre parcel. This review addresses the entire project, including the water facilities and the travel plaza. My comments are made in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended, the associated regulations at 36 CFR 800, and the Programmatic Agreement between the State of Ohio Department of Development and the Ohio Historic Preservation Office.

Project photographs and maps reveal that the proposed 37-acre travel plaza site has been substantially modified. This area has been extensively graded, and contains several modern commercial buildings and a detention pond. Therefore, given the history of development in the proposed location of the travel plaza, it is my opinion that this portion of the project is not likely to affect historic properties. The proposed location of the water facilities improvements, however, will require further attention.

In 1980, archaeologists from the Case Western Reserve University Department of Anthropology conducted an archaeological survey of existing and proposed interchanges of the Ohio Turnpike. Five archaeological sites were recorded at the intersection of SR 49 and the Ohio Turnpike, including two sites immediately adjacent to the currently proposed project area. The 1980 survey, however, was restricted to the narrow, triangular alignments of the proposed interchange, and did not extend into adjacent areas. Considering the proximity of known archaeological sites, it is highly likely that significant archaeological sites could exist in the area. Therefore, I recommend that archaeologists conduct a preliminary archaeological survey of the proposed

22.96-acre water facilities site in order to identify any properties that may be eligible for listing in the National Register of Historic Places. A preliminary archaeological survey consists of a review of records, documents, maps, and other sources, as well as a field investigation. The field investigation generally includes surface examinations or the excavation of small test pits, depending on surface conditions. I have enclosed a copy of the site plan that indicates the recommended survey area. You may view a list of qualified archaeological consultants online at http://www.ohiohistory.org/resource/histpres/docs/ArchysMaster.pdf. A copy of the results of the survey must be submitted to the Ohio Historic Preservation Office for review.

If you have any questions, please contact me at (614) 466-2285, or by email at tmallen@odod.state.oh.us.

Sincerely,

Timothy M. Allen, Environmental Specialist
Office of Housing and Community Partnerships

Enclosure

c: Mark Epstein, OHPO

#507

Professional Archaeological Services Team

Phase I Cultural Resource Management (CRM) survey for aProposed 9.29 ha (22.96 a.) Water Facilities in Northwest Township, Williams County, Ohio

Kevin A. Nye
Craig S. Keener, Ph.D.

June 2007

Professional Archaeological Services Team
"Interpreting the Past, Envisioning the Future"

Phase I Cultural Resource Management Survey of a Proposed 9.29 ha (22.96 a.) Water Facilities in Northwest Township, Williams County, Ohio

Kevin A. Nye

Craig S. Keener, Ph.D.

Prepared for:

Maumee Valley Planning Organization
1300 E. Second St., Suite 200
Defiance, OH 43512-9918

Lead Agency: **Ohio Department of Development**

Professional Archaeological Services Team
5180 US 42 South
Plain City, OH 43064

Phone/Fax: **614.733.0987** E-mail: **pasteam@earthlink.net**

Craig S. Keener P.I.

6.22.07

Abstract

Professional Archaeological Services Team conducted a Phase I Cultural Resource Management (CRM) survey for a proposed 9.29 ha (22.96 a.) Water Facilities in Northwest Township, Williams County, Ohio. The proposed survey was conducted in June of 2007 at the request of the Maumee Valley Planning Organization. The survey is investigating the project under Section 106 requirements as they pertain to cultural resources.

The project area is located in the Till Plains on an end moraine on State Route 49 north of the Ohio Turnpike just east of the Village of Columbia. The project is represented by a grass covered and wooded lot. The landform is relatively flat with minimal slope with the only exception being in the northern end where the project area slopes into a low wet area.

Three soil types: Glynwood (GlB) loam and Blount (BoA and BoB) loams represent the project area. Shovel test units / probes and visual inspection were used to examine the project. Testing failed to identify any archaeological sites. Consequently, no further cultural resource work is recommended for the project.

Table of Contents

Abstract....1
Figures and Plates....3
Introduction....4
Background Investigation....4
Cultural History....6
Environmental Section....11
Physiography....11
Soils....12
Fauna....12
Flora....12
Formulation of a Research Design....13
Methodological Approach....13
Artifact Analysis....14
Lithic Classification....14
Curation....16
Field Work....17
Conclusions and Recommendations....17
References....17
Figures....25
Plates....30

Figures

1. Map of Ohio Political Boundaries showing the project area.
2. Portion of the USGS 1961 (Photoinspected 1973, Photorevised 1979) *Clear Lake Quadrangle, Indiana – Ohio – Michigan;* 1961 (Photoinspected 1973) *Edon Quadrangle, Indiana – Ohio;* 1961 (Photoinspected 1973) *Blakeslee Quadrangle, Ohio;* 1961 (Photoinspected 1973, Photorevised 1977) *Nettle Lake Quadrangle, Ohio – Michigan; 7.5 Minute Series (Topographic)* maps showing the location of the project area.
3. Portion of *An Illustrated Historical Atlas of Williams County, Ohio* (Andreas and Baskins 1871) showing the approximate location of the project area.
4. Portion of the 1914 *Pioneer, Ohio 15 Minute Series (Topographic)* map showing the general location of the project area.
5. Fieldwork map of the project area showing the placement of shovel test units/ probes.

Plates

1. View from the northeast corner of the northern extension showing the visually inspected area, facing southwest.
2. View from the center of the northern extension showing the visually inspected area, facing south.
3. View from the northwest corner of the northern extension showing the visually inspected area, facing southeast.
4. View from the datum location, facing southeast.
5. View from the datum location, facing south.
6. View from the southwest corner of the project area, facing north.
7. View from the southwest corner of the project area, facing north.
8. View from the southeast corner of the project area, facing west.
9. View from the southeast corner of the project area, facing northwest.
10. View from the northeast corner of the project area, facing south.
11. View from the northeast corner of the project area, facing southwest.
12. View from the north-central portion of the project area, facing southwest.
13. View from the north-central portion of the project area, facing south.
14. Example of disturbance encountered within the wooded portion of the project area.
15. View of shovel test unit 270m S, 60m E.

Introduction

Professional Archaeological Services Team conducted a Phase I Cultural Resource Management (CRM) survey for a proposed 9.29 ha (22.96 a.) Water Facility in Northwest Township, Williams County, Ohio (Figures 1-3). The proposed survey was conducted at the request of the Maumee Valley Planning Organization. The survey is investigating the project under Section 106 requirements as they pertain to cultural resources.

The proposed project involves the construction of two wells, a water treatment plant, elevated storage tank, and water distribution lines. The project area is represented by a grass covered and wooded lot (Plates 1-15). The landform is relatively flat with a modern travel plaza including semi-tractor parking west of the project. The southern boundary of the project is the right-of–way for the Ohio Turnpike.

The project is situated on the Till Plains on an end moraine dating to the Late Wisconsinan glaciation (Pavey et al 1999). There are three soil types: Glynwood (GlB) and Blount (BoA and BoB) loams that represented the project area. The neareast drainage is an unnamed intermittent stream that drains into the North Branch Eagle Creek approximately 152.4 m (500 ft) to the east.

The Area of Potential of Effect (APE) was not delineated for this project by the lead agency. This survey looks only at the footprint of the project. There are no historic houses in view from the project. To the east and north of the project are agricultural fields, while to the south is the turnpike.

Subsurface shovel test units, probes and visual inspection were used to examine the project area. Dr. Craig S. Keener served as the principal investigator, while Kevin Nye, and Josh Niedermier served as a field technicians. The report and figures were completed by Kevin Nye and Dr. C. S. Keener.

Background Investigation

An archival review was conducted for the project area and surrounding study area, which is defined as a 3.2 km (2 mi.) radius around the project area. The archival review is conducted in order to ascertain what archaeological and/ or historical resources were previously located within or around the project area. This information can then be used to help formulate research questions/ hypotheses and appropriate testing methodologies for the project area. The archival research enables investigators to identify potential regional patterns in archaeological assemblages or architectural styles and aids in determining a building or site's significance. Archival resources that were analyzed included historic atlases and maps, archaeological and architectural inventories, the National Register, and county histories.

Mills' (1914) atlas was consulted to determine if any prehistoric earthworks/ mounds, villages or burials were reported in the project area or study radius. Mills hand plotted most of these sites on county maps from the recollections of postmen or local individuals who knew or had heard of such sites in these vicinities. The vast majority of these sites were not field checked, so the accuracy of a given site's position or its actual existence is questionable unless field checked. Mills' atlas is a useful planning tool, however, since it is reliable in giving a researcher a general idea of where earthworks/mounds may be located. Analysis of the Williams County Mills' map shows no sites in the project area. A burial site is indicated approximately 1.6 km (1 mi) to the south.

The USGS 1961 (Photoinspected 1973, Photorevised 1979) *Clear Lake Quadrangle, Indiana – Ohio – Michigan;* 1961 (Photoinspected 1973) *Edon Quadrangle, Indiana – Ohio;* 1961 (Photoinspected 1973) *Blakeslee Quadrangle, Ohio;* 1961 (Photoinspected 1973, Photorevised 1977) *Nettle Lake Quadrangle, Ohio – Michigan; 7.5 Minute Series (Topographic)* maps of the Ohio Archaeological Inventory (OAI) identified no previously identified archaeological sites within the project area. Two sites are situated immediately adjacent to the project area, 33 WI 8 – 33 WI 9, and three sites were recorded in the study radius. All previously recorded sites are listed below.

Site #	Temporal Affiliation	Site Type
33 WI 8	Lt. Archaic / 19th – 20th C.	Lithic deposit / Hist. scatter
33 WI 9	Unassigned Prehistoric	Lithic deposit
33 WI 18	Unassigned Prehistoric	Lithic deposit
33 WI 19	Lt. Archaic / 19th – 20th C.	Lithic deposit / Hist. scatter
33 WI 20	Lt. Archaic / 19th – 20th C.	Lithic deposit / Hist. scatter

No CRM surveys were found to overlap the project. One survey was located within the study radius (Bush 1981) and recorded all five previously identified sites. This survey involved the area of the turnpike interchange with SR 49

Examination of the Ohio Historic Inventory files failed to identify any buildings, sites or structures within the project area or along its boundary.

Examination of the NRHP files failed to identify any buildings, sites or structures within the project area or immediately adjacent.

The Williams County histories indicate no historical events or historical significance associated with the project area (Battey 1882).

The 1871 *An Illustrated Historical Atlas of Williams County, Ohio* (Andreas and Baskins 1871) shows no house in or adjacent to the project area (Figure 3). The project appears to be owned by M.C. Beach, Lorince Kellogg, and Ezekiel Kellogg.

The 1914 *Pioneer, Ohio 15 Minute Series (Topographic)* map does not show a building in or adjacent to the project area (Figure 4).

The USGS 1961 (Photoinspected 1973, Photorevised 1979) *Clear Lake Quadrangle, Indiana – Ohio – Michigan, 7.5 Minute Series (Topographic)* map shows no buildings in the project area. The map appears to be out of date not showing the modern travel plaza development.

Cultural History

The subsequent text is a summary of cultural developments that have occurred over time in the Ohio Region. This description of various cultural manifestations is presented in a broad and regional manner in order to provide an interpretative framework from which general research questions/hypotheses can be applied to a project area.

During the end of the Pleistocene the glacial retreat produced drastic changes in regional faunae and florae populations. Most of the so-called "megafauna" became extinct and broad regional vegetational changes occurred as the temperature increased (Shane 1994). The Native American groups to first inhabit the Ohio region had to cope with the rapidly changing subarctic climates. Some have argued (e.g., Martin and Klein 1984) that Paleoindian populations relied extensively or exclusively on hunting big game animals such as the mammoth, mastodon, and herd animals (e.g., long horned bison). Recent findings of a mastodon at the Burning Tree site in Licking County support this premise that Paleoindian populations were big game hunters (Fisher et al. 1994). However, while there is little doubt that Paleoindian populations hunted big game, this was not the only food resource option. Others have suggested that Paleoindian populations relied more extensively on smaller game animals and plant resources, employing a more balanced subsistence strategy (Bamforth 1988; Lepper 1988). Consequently, Paleoindian populations in Ohio have been viewed as highly mobile/ nomadic and their sites typically are indicative of transitory behavior and reflect seasonal use of available animal and plant resources.

The artifact assemblage of the Paleoindian Period (14,000 B.C. to 8,000 B.C.) is characterized by the Clovis projectile point types, steep edged scrapers, blades, and utilized flakes and tools (Justice 1987; Tankersley 1994). Although not well documented for eastern North America, bone and wood tools were presumably commonly used as well. The Clovis point is a fluted lanceolate with a ground concave base and parallel or slightly convex sides. Unfluted Plainview types are also common to this period, but infrequently reported in Ohio.

Most reported Paleoindian sites in Ohio are surface finds recovered from elevated rises, hill/ridge tops, or along terraces within valley floors (Prufer and Baby 1963). Recent findings in the past two decades have resulted in additional information on site composition. Along the Ohio River, excavations at the Manning site revealed three distinct Late Paleoindian occupations that exhibited tool clusters and possible residential

and/or activity areas (Lepper 1994). Evidence of hunting and/or hunting locations have been found near remnant glacial ponds, bogs, or along river valleys (e.g., Burning Tree Mastodon, Nobles Pond, and Sandy Springs) (Dancey 1994). Research on quarries and flint acquisition in Central Muskingum River Valley (Lepper 1986; Tankersley 1990) and the Midwest as a whole has produced new information on land use patterns and workshop sites. These sites and/or investigations have produced significant information, nonetheless, the picture of the Paleoindian Period within Ohio is incomplete and the scarcity of recorded sites make any newly identified Paleoindian site of potential interest.

Cultural developments in the Archaic Period reflect the impact of post-Pleistocene climatic changes in which moderate and temperate climates replaced the subarctic conditions of the glacial period. A wider range of natural resources became available, and based on the presence of ground stone tools, it appears that plant foods became a significant part of subsistence. Populations appear to become less transitory, with sub-regional lithic assemblages composed of greater percentages of local flint resources. The Archaic spans a broad time period and is broken up into three stages: Late, Middle, and Early.

The Early Archaic Period (8,000-6,000 B. C.) is marked by a greater variety of tools, in particular projectile points. Thebes, Kirk, and Palmer point types are just a few of many new variations being created during this period (Justice 1987). Most of these points are basally notched, bifurcates, or corner notched, and many exhibit ground bases, beveled blades, and/or serrated edges. Early Archaic sites are more commonly found on outwash terraces within the river and stream valleys of the Till Plains and Allegheny Plateau. The predominance of projectile type tools may indicate a greater reliance on hunting strategies, however, seasonal exploitation of plant foods and use of river biomes certainly were important aspects of subsistence. Other tools that characterize this period include end scrapers, utilized flakes, and some ground stone tools.

Little is known about the Middle Archaic Period (6000-3000 B. C.) in Ohio. Few undisturbed sites have been recorded. The climate continued to change during this period and the majority of Middle Archaic sites are found on terraces and floodplains of stream valleys (Genheimer 1980). Projectile points of this era are generally represented by heavy stemmed or side notched varieties. There is also an apparent increase in ground stone tools such as atlatl bannerstones (both cylindrical and winged), slate pendants, and full grooved axes.

The Late Archaic (3,000-1,000 B.C.) represents a period of diversification and localization of pre-Woodland populations (Dragoo 1976; Pratt 1981). Tool assemblages are typically composed of flint from nearby (local) outcrops. A wide array of drills, scrapers, knives, and groundstone items are associated with this assemblage. Projectile points of this period are generally crude, stemmed types (e.g., McWhinney), but include many varieties. Burial goods, such as bannerstones and other slate goods, and flint items suggest the development of more elaborate ceremonial customs that would continue to grow in the Woodland period. The presence of some exotic goods, such as flint from distant outcrops suggests the development of long distance trade. Sites are

usually large in size and generally reflect continual use of an area. The variety of site types is indicative of a specialization to seasonal exploitation of localized environments and an increase in reliance on plant foods that would carry over into the Woodland Period, resulting in the domestication of several wild species. Site locations along terraces suggest that during the spring and summer aquatic and plant resources in river valleys were heavily utilized, while during the fall and winter the uplands were focused upon for nut harvest (e.g., hickory and walnut) and wild game hunting. Vickery (1980) has suggested that two types of settlements occurred during this period, the local base camp affiliated with a restricted territory, and larger scale camps indicative of the use of regional resources.

The Early Woodland Period (1,000 B.C. to 100 B.C.) represents a continuation and elaboration of cultural manifestations developed in the Late Archaic. The Early Woodland Period is set apart from the Archaic by the intensification of its mortuary practices with the construction of burial mounds and extensive exchange networks for burial/ritual goods, use of ceramic vessels, and the use of indigenous or non-indigenous domesticated cultigens such as chenopodium and sunflower (Dragoo 1976). The introduction of pottery is important because is suggests the greater reliance on food processing and storage (e.g., for nuts), and may indicate a greater emphasis on gathering of plant foods versus hunting. This change also marks a shift towards the development of cultivation and later agriculture which would occur in the Late Woodland. Pottery first appears in the Ohio Valley between 1,000 to 100 B.C. and is characterized as plain surfaced, thick, grit tempered and typically possessing a flat based and conical vessel form (e.g., Fayette Thick type).

Early Woodland settlements are characterized by small hamlet/village sites generally located on low terraces and floodplains of stream valleys. Little work has been conducted at these sites. Evidence of circular structures has been found at several sites, suggesting semi-permanence of the inhabitation. Projectile points found at Early Woodland sites are generally large ovate-based or stemmed varieties (Justice 1987). The mortuary complex of Adena sites is characterized by conical mounds generally small in size. Mounds usually are found isolated but may be accompanied by surrounding enclosures. Burial mounds are typically found along high terrace or bluffs overlooking stream valleys of the Ohio River. Examples of large Early Woodland mounds include the the Sentinel Mound (Harrison County), the Miamisburg Mound (Montgomery County), the Adena Mound (Ross County), and the Cemetery Mound (Washington County). Burials are often, but not always, placed in the center of the mound floors. Some burials are lined with logs, and often contain exotic goods such as high quality flint projectile points, copper bead necklaces, and slate and ground stone items.

The Middle Woodland period (100 B.C. to A.D. 500) exhibited a continuity of Early Woodland traits with similar habitation and mortuary site locations along major stream valleys. Subsistence strategies continued to rely heavily on food supplies attained from hunting and gathering (e.g., nut varieties, deer, berries, fish, seeds, and small mammals).

There is however, an apparent greater reliance on seed food such as chenopodium, sunflower, and maygrass, known as the Eastern Agricultural Complex (Wymer 1996). Corn also makes it first appearance during this period, but only in small quantities, indicating it was not a major part of the diet.

Settlement patterns of the Middle Woodland appear to center around small hamlets which in turn appear to be grouped near earthwork complexes (Pacheco 1996). Information on "hamlets" is still formative, however, excavations at such notable sites as Jennison Guard (Blosser 1996), Murphy (Dancey 1991, 1992) and Twin Mounds (Fischer 1969, 1970) have found that they are located in larger stream valleys and are the focus of many specialized activities (e.g., bladelet manufacture). Secondary encampments have been found in the uplands, indicating exploitation of seasonal plant (e.g., nuts) or animal (e.g., deer) resources. Ceremonial complexes were also the scene of possible communal activities, and rectangular structures and workshop areas have been found at many of the sites (e.g., Seip and Ft. Ancient [Connolly 1996]). However, no clear evidence of villages or hamlets have been found within the earthwork complexes themselves (Dancey 1996; Prufer 1965).

A distinction from the Early Woodland is the development of extensive and elaborate geometric earthwork complexes. Most archaeological work has been conducted upon these earthworks and associated mounds (e.g., Shetrone 1926). Some of the more notable Middle Woodland complexes include Hopewell, Mound City, High Banks, Newark, Seip, Harness, Stubbs, and Marietta. Hill top enclosures tend to be more common in the southwest Ohio area and are exemplified by such sites as Fort Ancient, Pollock, Fort Hill, and Miami Fort. From these sites excavations have revealed an elaborate mortuary-oriented culture, with evidence of preburial and postburial activities, and concentrated and large amounts of exotic grave goods, indicating well established trade connections or long distance acquisition. While Middle Woodland populations have been viewed as egalitarian the focus of exotic goods in the earthwork complexes indicates that some individuals did possess higher status.

The artifact assemblage of the Middle Woodland is dependent on its context. Exotic trade goods are generally concentrated in mortuary sites, while more utilitarian artifacts such as ceramics and lithic workshops are located at hamlets or encampments. Middle Woodland ceramics are typically manufactured with grit temper and possess cordmarked or plain exterior surfaces. Some ceramics are decorated with stamped, punctated or zoned designs, with a few rare items containing iconography (Greber and Ruhl 1989). Vessels generally have thinner walls than the Early Woodland ceramics, and are globular in form. Lithic artifacts include bladelets, polyhedral cores, expanding base projectile points (e.g., Snyder type), drills, and a variety of ground stone tools. The mortuary type items, also found in workshops, include materials found over long distances from several regions of North America. These include chlorite and mica from the Southeast, in the southern Appalachians; marine shell, alligator and shark teeth, and turtle shell from the Gulf Coast; obsidian from the Yellowstone area in the Rockies; copper from the Great Lakes; silver from Ontario; meteoric iron; and non-local fine quality flint from North Dakota (Knife River), and southeast Indiana (Harrison County

[Indiana Hornstone] flint). Other items made from non-local or local material include platform pipes, copper axes/adzes and plates, copper skull caps, copper and silver earspools, large predatory animal canine teeth, and leaf shaped flint cache blades (Griffin 1978).

The Late Woodland period (A.D. 500 to A.D. 900) is characterized by the continuation of some Middle Woodland traits such as similar tool complexes (e.g., Chesser type points, ceramic manufacture, and continuation of exotic trade goods in some areas). However, the large ceremonial complexes of the Middle Woodland do not occur in the Late Woodland, changing instead to rather small burial mounds and/or stonebox graves. Distinct subregional expressions also appear during this period, such as Cole and Newtown (Baby and Potter 1965; Prufer and McKenzie 1966). Ceramic assemblages in southern Ohio are typically cordmarked, and either contain chert or limestone tempering agents (e.g., Peters and Chesser series). In central Ohio ceramics are generally cordmarked and grit tempered (e.g., Cole series). The lithic assemblage is characterized by Chesser-side notched points, Raccoon notched, triangular side-notched points, and triangular points (Justice 1987). Ground stone tools such as three quarter groove axes, pestles, and metates are common. There is also an increase of representative bone tool artifacts (e.g., awls, punches, etc.) during this period (e.g., Philo site).

Settlement patterns change during the Late Woodland, with populations aggregating into village sites typically located within major river valleys along the base of bluffs or terraces. The amalgamation of people into villages appears to correspond with the introduction of corn, bean, and squash agriculture. The greater reliance on cultivated plants required a larger work force for planting and harvesting, making a permanent settlement more advantageous. The advent of agriculture also corresponds with an apparent increase or threat of warfare. Large groupings of people provided better defensive capabilities to a community. Towards the end of the Late Woodland, villages began to be placed on more easily defendable terrain and palisades began to be constructed. It also appears that upland locations were selected for temporary encampments in the autumn and winter in order to exploit seasonal food resources.

The Mississippian/Late Prehistoric period (A.D. 900 to 1685) represents a continuation of most of the cultural manifestations that occurred in the Late Woodland. Settlements are still found in river valleys, although villages tend to be situated on more highly defendable terrain such as bluff or terrace edges. They also tend to be larger, and many are ringed by defensive palisades, suggesting that warfare was a factor in site selection. There is an increased reliance on corn agriculture and consequently, populations become more sedentary. Ceramic assemblages contain both grit and shell tempered varieties. Lithic assemblages are dominated by triangular points and knives. There is also extensive use of bone and shell for tools or ceremonial items. Some decorative motifs on shell artifacts or ceramics suggest influence from both southeastern and Mississippian cultures (e.g., weeping eye motif at Ft. Ancient sites) (Griffin 1978). Several distinct sub-regional groups (e.g., Ft. Ancient, Monongehela, Whittlesey, and Western Basin) develop across Ohio, with each containing unique developmental phases.

The project area falls within an area affiliated with Western Basin assemblages.

The Historic Period begins in the Ohio region during the early 1680s with recorded accounts of Iroquois war parties driving out indigenous tribes of the area. Little historical information is known about the indigenous seventeenth century inhabitants of the Ohio region or the specifics of the Iroquois intrusion into this area, except that the Iroquois were successful in dispersing or defeating several tribes from this region, including the Shawnee, Erie, and Fire Nation (Keener 1998). Northwest Ohio remained vacant between 1685 and 1740 and served as a hunting area for the Iroquois and various tribes (Ottawa, Mississaugi, and Wyandot) located near Detroit (O'Callaghan 1856; Wheeler-Voegelin 1974).

Williams County was organized in 1824. Although the northern boundary was disputed until 1836 when Ohio won the "The Ohio – Michigan War" and the present boundary was established. The earliest settlers arrived in the 1820s and settled in the area that is now the City of Bryan. Many early settlers came from New York. Farming was the dominant economy in the nineteenth century and still is important in the 21st century. The City of Bryan developed as the leading economic center for the county and became the county seat in 1839. The first railroad was built between 1846 – 1847 (Battey 1882). Road systems, such as the Ohio Turnpike, interstates, state routes, and county roads provide the bulk of transportation needs today.

Northwest Township was organized into its present boundaries 1840. The Pottawatomie tribe lived around Nettle Lake prior to 1843. Credit for being the earliest settler is given to Aaron Burr Goodwin who arrived in either 1835 or 1837. The only village in the township is Columbia which was laid out in 1854. The township was historically covered in heavy timber and provided for most of the early industry (Battey 1882). The township is presently agriculturally oriented.

Environmental Section

Physiography

Williams County is situated within both the Lake Plains and Till Plains. The Till Plains contains deep drift deposits. Underlying bedrock is represented by sedimentary rocks (sandstone and shale) of Devonian and Mississippian age. Major drainages of the county include the St. Joseph River, Tiffin River, Bear Creek, Eagle Creek, Nettle Creek, Brush Creek, Owl Creek, Coon Creek, Beaver Creek and Leatherwood Creek (Pavey et al. 1999; USDA, SCS 1978).

The project area is located in the northwest portion of Williams County. The elevation within the project area ranges from approximately 295 – 301 m (967.8 – 987.5 ft).

Soils

Soil types in the project area are important, for they can help determine the likelihood/potential for cultural activities or archaeological sites. Soil types also help us understand the process of taphonomy and how sites are preserved or changed from depositional factors, erosion, or soil acidity. Three soil types are located within the project area and are listed below:

Glynwood (GlB) loam, which possesses 2 to 6% slope
Blount (BoA) loam, which possesses 0 to 2% slope
Blount (BoB) loam, which possesses 2 to 6% slope

These soils have a potential to yield precontact and postcontact sites (USDA, SCS 1978). The Blount soils are somewhat poorly drained.

Fauna

The clearance of most of Ohio's presettlement forest resulted in the extinction of many species which could have been used by prehistoric populations. The most useful species found in archaeological assemblages of prehistoric and early Euroamerican populations include deer, elk, bison, black bear, wolf, beaver, turkey, passenger pigeon, mountain lion, ruffed grouse, cottontail rabbit, squirrel, water fowl, fish, and mussels. This variety of faunal resources supplied the seasonal food needs of indigenous populations and provided raw materials for tools (e.g., bone awls, shell hoes) and/or ceremonial artifacts (e.g., canine teeth, deer antler skull caps) (Cleland 1966).

Flora

Presettlement vegetational patterns in Ohio have changed dramatically with the arrival of Euroamerican populations because of the impact of agriculture and industrial and urban developments. Large swaths of indigenous forests were cut down for use as lumber, fuel for the coal and iron industries, a source for heating (e.g., fire), and to clear fields for agricultural uses. Marshes, wetlands and prairies were also altered by post settlement populations with most wet areas having been drained for agriculture, and prairies replaced by cultivated fields. The presettlement vegetational patterns of Ohio have been classified by Gordon (1966). In northwestern Ohio forests were once dominated by mixed mesophytic segregates such as broad leaved deciduous species and evergreen varieties. The project area was once dominated by ash, elm, beech, maple, and walnut. Nut bearing varieties provided a seasonal source of food for prehistoric populations.

Formulation of a Research Design

The development of the research design incorporates information obtained from the archival review, culture history, and environmental context, which are used to identify objectives and questions to apply when testing a designated project area. The information obtained from the local and regional area help in the assessment of any identified building/site when determining its potential eligibility for nomination to the NRHP. A summary of the background findings and how this information may relate to the testing and evaluation of the project is provided below.

The project area is situated in the Till Plains on an end moraine. Slope is 0-6% and an unnamed intermittent stream draining into the North Branch Eagle Creek is approximately 152.4 m (500 ft) to the east. Three soil types: Glynwood (GlB) and Blount (BoA and BoB) loams represent the project area.

The archival review indicated that two recorded sites are located adjacent to the project area. Additionally, three sites were found in the surrounding study radius. Prehistoric sites in the greater regional are found on similar moraine landforms. No historic residences are located in the project area so a historic residential deposit (Ball 1984; South 1977) is not expected.

Methodological Approach

The project area was tested using subsurface testing and visual inspection. The testing methodologies are described below. Sites, if identified, are inventoried by Field Site #s (FS #). Each sequential site identified follows in numerical order and is recorded within the field notes and field maps and discussed accordingly within this report.

Subsurface testing will involve the excavation of a series of shovel test units within areas with <50% surface visibility. Shovel test units will be placed in a 15 m by 15 m (50ft by 50ft) square grid. If a shovel test unit is identified as positive, four radial shovel test units will be excavated in the four cardinal directions from the positive test unit (within the project boundaries). Radial shovel test units will be spaced 7.5 m (25ft) from the positive shovel test unit. Radials are not excavated in slope, disturbed locations, wet soils, or between positive test units. Radial shovel test units are used to help identify site boundaries within the project area for any site identified. Shovel test units and radial shovel test units are .25 m^2 (2.69ft^2) in size and are excavated by natural stratigraphic layers to a depth of approximately 5 cm (2in) below subsoil. The soil matrix from each stratigraphic level will be dry screened through .6 cm (.25in) hardware mesh. Any recovered artifacts are provenienced and placed in bags. Any features found on the subsoil floor of a shovel test unit will be drawn to scale with a plan view and photographed. A representative photo of the floor of a shovel test unit will be provided for the project area to exhibit a typical shovel test unit encountered during the survey.

Excavated areas, which reveal complete disturbance to the subsoil or exhibit excessive erosion (less than 5 cm of A horizon) are labeled shovel probes which possess 30 cm diameters or less. Shovel probes are not screened and are back filled when determined to be disturbed. Areas which exhibit wet soils (with standing water or saturated soil) or disturbance at the surface will be labeled as such on the fieldwork map and will not be excavated (unless noted by field supervisor).

Visual inspection will be used at areas where soils exhibit observable disturbance as evidenced by exposed subsoil, push piles, etc. Areas where disturbance is not obvious or intact soils are noted shovel test units will be used.

Artifact Analysis

Prehistoric and historic artifacts recovered in the field are washed and then inventoried for report purposes. Prehistoric artifacts are inventoried according to physical appearance (e.g., core, primary decortication flake, secondary thinning flake, granite hammerstone, bone awl, grit tempered pottery, etc.). The material from which artifacts are made from is identified in the inventory, such as flint type. Reference books (e.g., Justice 1987) are used when analyzing diagnostic artifacts. Specific studies on identified prehistoric assemblages are dependent upon what hypotheses or questions have been developed, if any, for the project area and the make-up of the assemblage. If a study on distribution or physical attributes of prehistoric artifacts is conducted, an entire section of the report is devoted to this endeavor. Prehistoric artifacts from each site are listed following the description of the site from which they were recovered or listed in a table in the back of the report. How the prehistoric assemblage was categorized into individual artifact classes is listed below. Attributes of flakes and tools is based on a number of references (e.g. Andrefsky 1994, 1998; Crabtree 1982; Kooyman 2000; Odell 2004, Pecora 2002), coursework and experience. Most of these artifact classes are commonly used by other CRM firms. While similar terms may be used by different companies it should be noted that classification of lithic debris is very subjective. In more advanced studies (e.g. Phase II or III) PAST may use a more refined technique that has been advocated by Pecora (2002).

Lithic Classification

Flake/Debitage

Primary Decortication: These flakes exhibit 100% cortex on the dorsal surface. Typically, but not always these flakes are large and thick and representative of the early stage of raw material reduction.

Secondary Decortication: Flakes have less than 100% of the dorsal surface represented by cortex. Like primary decortication flakes this flake debris represents the initial stage of material reduction.

Primary Flakes: Typically exhibit a triangular platform and have a bulb of percussion at proximal end. These flakes are typically associated with the shaping of cores and/or tool production.

Secondary Flakes: These flakes are generally longer than they are wide and possess a single lenticular platform. These flakes tend to lack a bulb of percussion and are smaller in size and thinner than primary flakes. These flakes are reflective of an intermediate stage of core and/or tool reduction process.

Thinning Flakes: These flakes typically exhibit an acute, lipped multifaceted platform. The flakes tend to be small, thin and slightly curved. They can possess multidirectional or parallel dorsal surface scars. These flakes are related to biface production tend to represent the intermediate and/or late stages of this process.

Finishing/Pressure Flakes: These flakes represent the late/final stages of biface production related to sharpening and/or trimming of a biface. They are very small in size, thin and slightly curved in cross-section and typically possess numerous multi-directional scars on the dorsal surface.

Flake Fragments/Broken Flakes: These are flakes which lack a distinguishable platform/proximal end.

Shatter/Blocky Irregular: These flake fragments are angular or square shaped pieces that have no distinguishable ventral or dorsal sides. These pieces are a related byproduct of raw material reduction and/or biface manufacture.

The physical attributes of debitage, such as flint type and whether a flake has been heat treated are listed for artifacts recovered at each site. If nearby flint resources can be identified through the use of identified quarry/outcrops (Stout and Schoenlaub 1945) this will be noted.

Tools

Cores: Prepared nodules of flint. These can include systematic reduction cores, multi- directional reduction, and bipolar core. Cores are made for the purpose of obtaining flakes or to be further modified into other tools.

Unifaces: Tools that have a working edge on one side only. Flake scars and/or modification is on one side only. Scrapers are commonly found as unifaces.

Bifaces: Tools that have a working edge, flake scars and or modification on both sides. These can come in many forms such as blanks and preforms related to the creation of items suitable for transport. These pieces are then worked into a more formal tool at a later time.

Modified Flakes: Includes retouched flakes, and utilized flakes. Typically the flake is used for scraping or cutting.

Ground Stone Tools: Includes ground stone tools such as stone axes, adzes, celts, hammerstones, bannerstones, and any other shaped pieces.

Fire Cracked Rock (FCR): FCR is rock cracked by intense heat associated with thermal activities. Not all FCR has to be cracked however to be termed FCR. Some stones in feature context show signs of heat alteration with color change (e.g. blackening or reddening). FCR in Ohio is made of a number of materials associated with igneous (e.g. granite), metamorphic (e.g. gneiss), and sedimentary rocks (sandstone, limestone, etc.). In Phase I surveys these items are counted but not curated. In more advanced studies (Phase II and III) the FCR is counted, weighed and may be size graded depending upon the research questions.

Historic artifacts are inventoried using a modified version of Stanley South's (1977) artifact categorization system, which places artifacts into the following functional groups: Kitchen, Architectural/Residential, Arms, Activities, and Personal. Each of these groups has several subcategories which allows for variation, and those artifacts that do not fit in a particular group are placed in a Miscellaneous category. Various ceramic/historic artifact source books are used when determining identity, age, function, and possible economic status of an historic assemblage. These books include: Cushion (1980), Dalrymple (1989), Fitting (1970), Hume (1991), Kovel and Kovel (1995 [1953]), Majewski and O'Brien (1987), Manson and Snyder (1997), McConnell (1990), Miller (1980), Miller et al. (1991), Newman (1970), Ramsay (1976), Sussman (1977, 1997), and Turnbaugh (1985).

Curation

Following the acceptance and clearance of the report, the property owner from which an archaeological site was identified is notified that artifacts were found. A written notice indicating that they may claim ownership of the artifacts or donate them to a curational facility is then sent to the property owner. Professional Archaeological Services Team (PAST) encourages property owners to donate recovered archaeological material. A copy of the property owner's decision is maintained at the office of PAST.

If donation is requested, artifacts, field notes, and photographic negatives will be donated to the Ohio Historical Society's Curation Facility. If donation is denied and the artifacts are claimed by the property owner, PAST will house field notes and photographic negatives, and return all recovered artifacts to the property owner.

Field Work

The field work portion of the Phase I CRM survey was conducted in June of 2007. One field datum was placed in the northwest corner of the wooded portion of the project (Figure 5). One obviously disturbed area containing many large push piles was observed just north of the wooded portion and was visually inspected (Figure 5; Plates 1 – 3). The test area is situated on a slightly undulating landform covered with secondary tree growth with a small portion on the east side in tall grass (Plates 4 – 13). A total of 276 shovel probes and five shovel test units were used to test the wooded area. Within the testable portion of the project several areas of disturbance in the form of push piles and overgrown trails were encountered. Plate 14 shows an example of disturbance within this area. The vast majority of the parcel exhibited either eroded soils or low wet areas. The location with intact soils exhibited a typical 10YR4/2 silt loam at an average depth of 14.2cm (5.6 in) over a 10YR 5/4 loam subsoil. No archaeological sites were identified during the survey.

Conclusions and Recommendations

Professional Archaeological Services Team completed a Phase I Cultural Resource Management survey in Northwest Township, Williams County, Ohio. The survey was conducted at the request of the Maumee Valley Planning Organization. The proposed project was conducted for the development of a 9.29 ha (22.96 a.) Water Facility. Subsurface shovel test units / probes and visual inspection were employed to examine the project. Testing found no archaeological sites. **Consequently, no further cultural resource work is recommended** for the project area.

References

Andreas and Baskins
1871 *An Illustrated Historical Atlas of Williams County, Ohio.* Andreas and Baskins Co., Chicago.

Andrefsky, W.
1994 Raw-Material Availability and the Organization of Technology. *American Antiquity*, 59(1):21-34.

1998 *Lithics: Macroscopic Approaches to Analysis.* Cambridge University Press.

Baby, R. S. and M. Potter
1965 *The Cole Complex: A Preliminary Analysis of the Late Woodland Ceramics in Ohio and their Relationship to the Ohio Hopewell Phase.* The Ohio Historical Society, Papers in Archaeology, No. 2.

Ball, D. B.
1984 Historic Artifact Patterning in the Ohio Valley. *Proceedings of the Symposium on the Ohio Valley and Historic Archaeology.* Vol. 2: 24-36.

Bamforth, D. B.
1988 *Ecology and Human Organization on the Great Plains.* Plenum Press, New York and London.

Battey, F.A.
1882 *County of Williams, Ohio.* F.A. Battey and Co., Chicago.

Blosser, J.
1996 The 1984 Excavation at 12D29S: A Middle Woodland Village in Southeastern Indiana. In *A View From the Core: A Synthesis of Ohio Hopewell Archaeology*, P. J. Pacheco, editor. Pp. 56-68, The Ohio Archaeological Council, Columbus.

Bush, D. R., L. Bush, and L. Grand
1981 *The Archaeological Resources of the Ohio Turnpike- Phase II Investigations at Existing and Proposed Interchanges.* Case Western Reserve University. On file at the Ohio Historic Preservation Office, Columbus.

Cleland, C. E.
1966 The Prehistoric Animal Ecology and Ethnozoology of the Upper Great Lakes Region. *University of Michigan Museum of Anthropology, Anthropology Papers, No. 29.*

Connolly, R. P.
1996 Prehistoric Land Modification at the Fort Ancient Hilltop Enclosure: A Model of Formal and Accretive Development. In *A View From the Core: A Synthesis of Ohio Hopewell Archaeology*, P. J. Pacheco, editor. Pp. 258-273, The Ohio Archaeological Council, Columbus.

Crabtree, D.
1982 *An Introduction to Flintworking.* Idaho State University Museum, Occasional Papers No. 28, Second Edition.

Cushion, J. P.
1980 *Handbook of Pottery and Porcelain Marks.* Faber & Faber, London.

Dalrymple, M. (editor)
1989 *Country Collections.* Time-Life Books. Alexandria, Virginia.

Dancey, W. S.
1996 Putting an End to Ohio Hopewell. In *A View From the Core: A Synthesis of Ohio Hopewell Archaeology*, P. J. Pacheco, editor. Pp. 396-405, The Ohio Archaeological Council, Columbus.

1994 *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area.* W. S. Dancey, editor. The Ohio Archaeological Council, Columbus.

1992 Village Origins in Central Ohio: The Results and Implications of Recent Middle and Late Woodland Research. In *Cultural Variability in Context: Woodland Settlements of the Mid-Ohio.* M. F. Seeman, editor. Midcontinental Journal of Archaeology, Special Paper No. 7: 24-29, Kent State University Press.

1991 A Middle Woodland Settlement in Central Ohio: A Preliminary Report on the Murphy Site (33LI212). *Pennsylvania Archaeologist*, 61 (2): 37-72.

Dragoo, D. W.
1976 *Mounds for the Dead: An Analysis of the Adena Culture.* Carnegie Museum, Pittsburgh.

Fischer, F. W.
1970 *Preliminary Report on the University of Cincinnati Archaeological Investigations, 1970.* Report on file, Department of Anthropology, University of Cincinnati.

1969 *Preliminary Report on the University of Cincinnati Archaeological Investigations, 1969.* Report on file, Department of Anthropology, University of Cincinnati.

Fisher, D. C., B. T. Lepper, and P. E. Hooge
1994 Evidence for the Butchery of the Burning Tree Mastodon. In *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area.* W. S. Dancey, editor. Pp. 43-60. The Ohio Archaeological Council, Columbus.

Fitting, J. E.
1970 Late Woodland Cultures of Southeastern Michigan. *Anthropological Papers.* No. 24. Museum of Anthropology, University of Michigan, Ann Arbor.

Genheimer, R. A.
1980 *An Automated Data Approach to Archaic Settlement Analysis in Southwestern Ohio*. Copy on file at the Ohio Historic Preservation Office, Columbus.

Gordon, R. B.
1966 *Map: Natural Vegetation of Ohio*. Ohio Biological Survey. Ohio State University, Columbus.

Greber, N. and K. C. Ruhl
1989 *The Hopewell Site: a Contemporary Analysis Based on the Work of Charles C. Willoughby*. Westview Press, Boulder.

Griffin, J.
1978 Prehistory of the Ohio Valley. In *Northeast.* B. G. Trigger, editor. Handbook of North American Indians, Vol. 15. W. C. Sturtevant, general editor. Smithsonian Institution, Washington.

Hume, I. N.
1991 [1969] *A Guide to the Artifacts of Colonial America.* A. A. Knopf, New York.

Justice, N. D.
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States: A Modern Survey and Reference*. Indiana University Press, Bloomington.

Keener, C. S.
1998 *An Ethnohistoric Perspective on Iroquois Warfare During The Second Half of the Seventeenth Century (A.D. 1649-1701)*. Ph.D. dissertation, The Ohio State University.

Kooyman, B. P.
2000 *Understanding Stone Tools and Archaeological Sites*. University of Calgary Press, Calgary.

Kovel, R. and T. Kovel
1995 [1953] *Kovels' Dictionary of Marks: Pottery & Porcelain 1650 to 1850.* Crown Pub., New York.

Lepper, B. T.
1994 Locating Early Sites in the Middle Ohio Valley: Lessons from the Manning Site (33Ct476). In *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area*. W. S. Dancey, editor. The Ohio Archaeological Council, Columbus.

1988 Early Paleoindian Foragers of Mid-continental North America. *North American Archaeologist*. 9: 31-51.

1986 *Early Paleo-Indian Land Use Patterns in the Central Muskingum River Basin, Coshocton County, Ohio*. Ph.d. dissertation, The Ohio State University.

Majewski, T. and M. J. O'Brien
1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. *Advances in Archaeological Method and Theory, Vol. 11*. Academic Press, pp. 97-209.

Manson, J. L. and D. M. Snyder
1997 *Evaluating Sites with Late Nineteenth or Early Twentieth Century Components for Eligibility in the National Register of Historic Places: Using Turn-of-the-Century Whitewares as Economic Indicators in Assessing Collections and Developing Contexts*. Report Submitted to the National Center for Preservation Technology and Training, Natchitoches.

Martin, P. S. and R. G. Klein
1984 *Quaternary Extinctions*. The University of Arizona Press, Tuscon.

McConnell, K.
1990 *Spongeware and Spatterware*. Schiffer Publishing Ltd. West Chester, Pennsylvania.

Miller, G. L.
1980 Classification and Economic Scaling of the 19th Century Ceramics. *Historical Archaeology*. 14: 1-40.

Miller, G. L., O. R. Jones, L. A. Ross (editors)
1991 *Approaches to Material Culture Research For Historical Archaeologists*. The Society For Historical Archaeology. Braun-Brumfield, Ann Arbor.

Mills, W. C.
1914 *An Archaeological Atlas of Ohio*. Ohio State Archaeological and Historical Society, Columbus.

Newman, S. T.
1970 A Dating Key for Post-Eighteenth Century Bottles. *Historical Archaeology*. pp. 70-75.

O'Callaghan, E.B. (editor)
1856 *Documents Relative to the Colonial History of the State of New York*. 16 vols. Weed, Parsons Printers, Albany.

Odell, G. H
2004 *Lithic Analysis*. Kluwer Academic, New York.

Pacheco, P. J.
1996 Ohio Hopewell Regional Settlement Patterns. In *A View From the Core: A Synthesis of Ohio Hopewell Archaeology*. P. J. Pacheco, editor. Pp. 16-35, The Ohio Archaeological Council, Columbus.

Pavey, R. R., R. P. Goldthwaite, C. S. Brockman, D. N. Hull, E. M. Swinford, and R. G. Van Horn
1999 *Quaternary Geology of Ohio*. Ohio Division of Geological Survey. Map No. 2.

Pecora, A. M.
2002 *The Organization of Chipped-stone Tool Manufacture and the Formation of Lithic Assemblages*. Unpublished Dissertation. The Ohio State University.

Pratt, G. M.
1981 *The Western Basin Tradition: Changing Settlement-Subsistence Adaptation in the Western Lake Erie Basin Region*. Ph.D. dissertation. Case Western Reserve University, Cleveland.

Prufer, O. H.
1965 The McGraw Site: A Study in Hopewellian Dynamics. *Cleveland Museum of Natural History, Scientific Publications*. Vol. 4 (1), Cleveland.

Prufer, O. and Baby, R. S.
1963 *Paleo-Indians of Ohio*. Ohio Historical Society, Columbus.

Prufer, O. H. and D. H. McKenzie
1966 Peters Cave: Two Woodland Occupations in Ross County, Ohio. *Ohio Journal of Sciences*. 66(3): 233-253.

Ramsey, J.
1976 *American Potters and Pottery*. ARS Ceramica.

Shane, L. C.
1994 Intensity and Rate of Vegetation and Climatic Change in the Ohio Region Between 14,000 and 9,000 14C YBP. In *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area*. W. S. Dancey, editor. The Ohio Archaeological Council, Columbus.

Shetrone, H. C.
1926 Explorations of the Hopewell Group of Prehistoric Earthworks. In *Ohio Archaeological and Historical Publications*, Vol. 35, Columbus.

South, S.
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Stout, W and R. Schoenlaub
1945 The Occurrence of Flint in Ohio. *Geological Survey of Ohio Bulletin 46*. Columbus.

Sussman, L.
1997 *Mocha, Banded, Cat's Eye, and Other Factory-Made Slipware*. Studies in Northeast Historical Archaeology. No. 1. Boston University.

1977 *Changes in Pearlware Dinnerware, 1780-1830*. Historical Archaeology. Vol. 11: 105-111.

Tankersley, K. B.
1994 Was Clovis a Colonizing Population in Eastern North America? In *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area*. W. S. Dancey, editor. Pp. 95-116. The Ohio Archaeological Council, Columbus.

1990 Late Pleistocene Lithic Exploitation in the Midwest and Midsouth: Indiana, Ohio, and Kentucky. In *Early Paleoindian Economies of Eastern North America*. K. B. Tankersley and B. L. Issac, editors. Pp. 259-299. JAI Press, Greenwich.

Tanner, H.
1987 *Atlas of Great Lakes Indian History*. University of Oklahoma Press, Norman and London.

Turnbaugh, S. P.
1985 *Domestic Pottery of the Northeastern United States*. Academic Press, Inc., Orlando.

United States Department of Agriculture, Soil Conservation Service (USDA, SCS)
1978 *Soil Survey of Williams County, Ohio*. United States Department of Agriculture, Soil Conservation Service, in cooperation with the Ohio Department of Natural Resources, Division of Soil and Water Conservation, and the Ohio Agricultural Research and Development Center.

Vickery, K. D.
1980 *Preliminary Definitions of Archaic Study Units in Southwestern Ohio*. Copy on file at the Ohio Historic Preservation Office, Columbus.

Wheeler-Voegelin, E.
1974 *Indians of Ohio and Indiana Prior to 1795.* Vol. I and II. Garlend, New York.

Wymer, D. A.
1996 The Ohio Hopewell Econiche: Human-Land Interaction in the Core Area. In *A View from the Core: A Synthesis of Ohio Hopewell Archaeology.* P. J. Pacheco, editor. Pp. 36-53. The Ohio Archaeological Council, Columbus.

Figures

STATE OF OHIO
George V. Voinovich, Governor
DEPARTMENT OF NATURAL RESOURCES
Donald C. Anderson, Director
DIVISION OF GEOLOGICAL SURVEY
Thomas M. Berg, Chief

Figure 1. Map of Ohio political boundaries showing the general location of the project area.

This map is intended to show the majority of townships that currently exist or have existed in the past. Especially in urban areas, all or parts of some townships may have been incorporated into cities or villages. Boundaries are based primarily on U.S. Geological Survey and county engineers' maps.

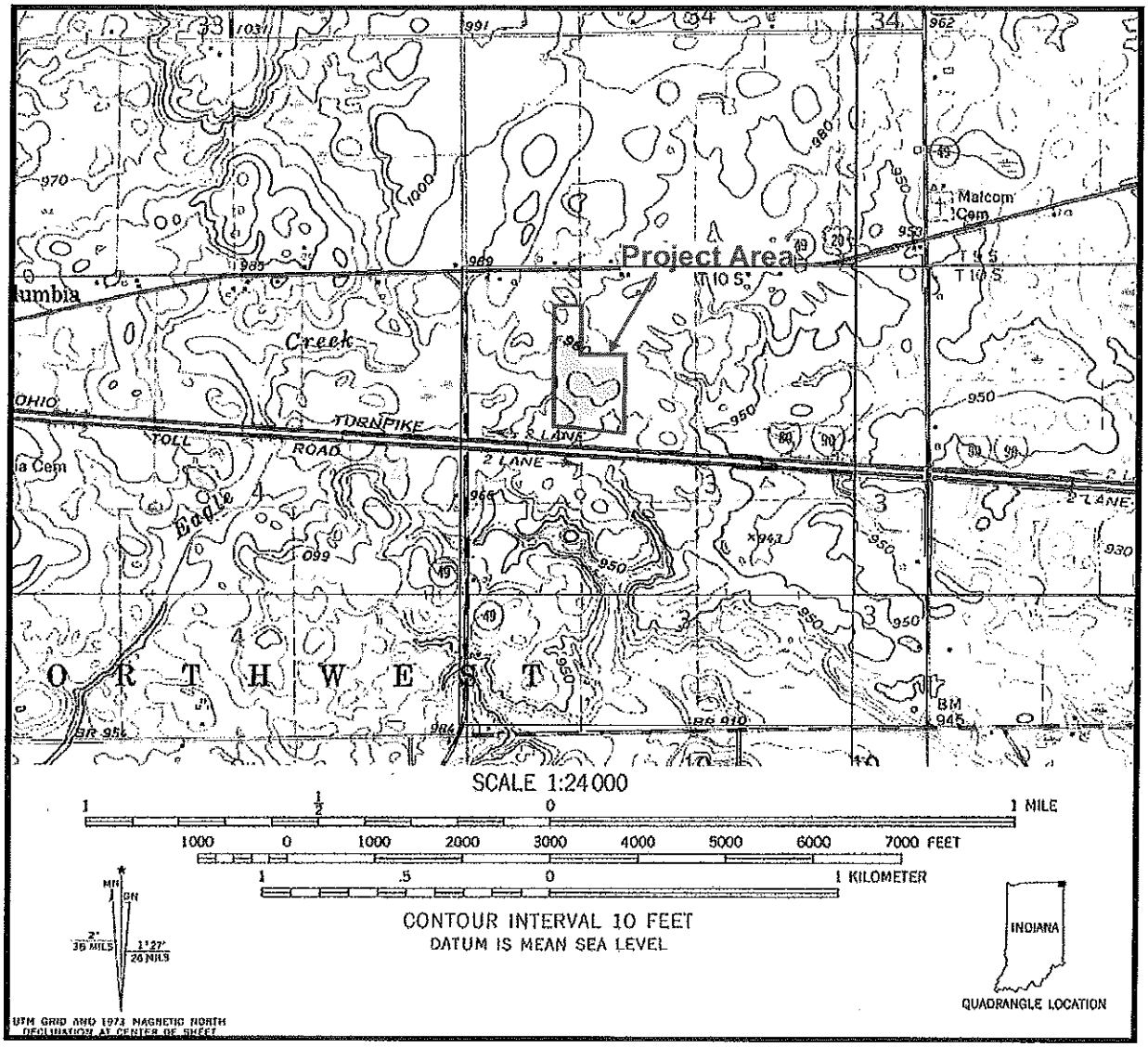


Figure 2. Portion of USGS 1961 (Photoinspected 1973, Photorevised 1979) *Clear Lake Quadrangle, Indiana-Ohio-Michigan;* 1961 (Photoinspected 1973) *Edon Quadrangle, Indiana-Ohio;* 1961 (Photoinspected 1973) *Blakeslee Quadrangle, Ohio;* 1961 (Photoinspected 1973, Photorevised 1977) *Nettle Lake Quadrangle, Ohio-Michigan; 7.5 Minute Series (Topographic)* maps showing the location of the project area.

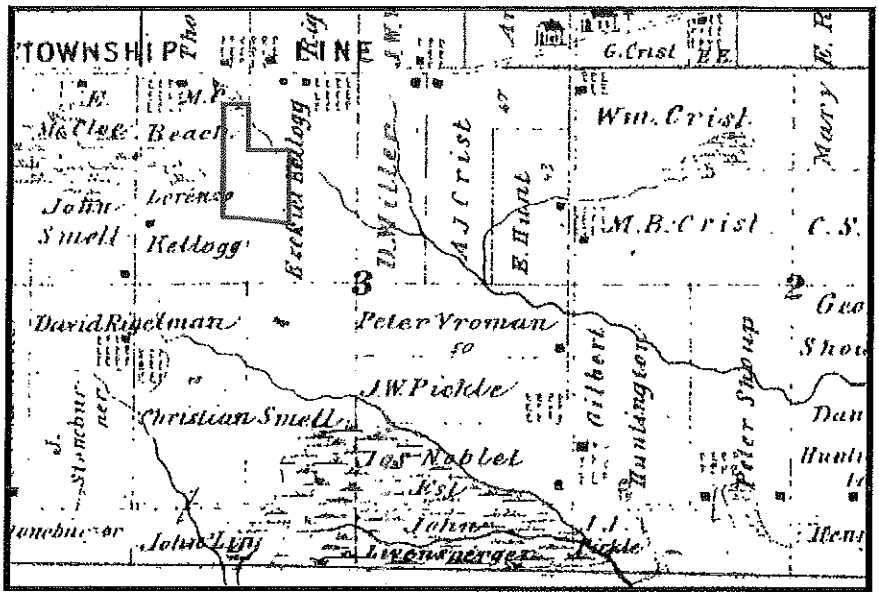


Figure 4. Portion of *An Illustrated Historical Atlas of Williams County, Ohio* (Andreas and Baskins 1871) showing approximate location of the project area.

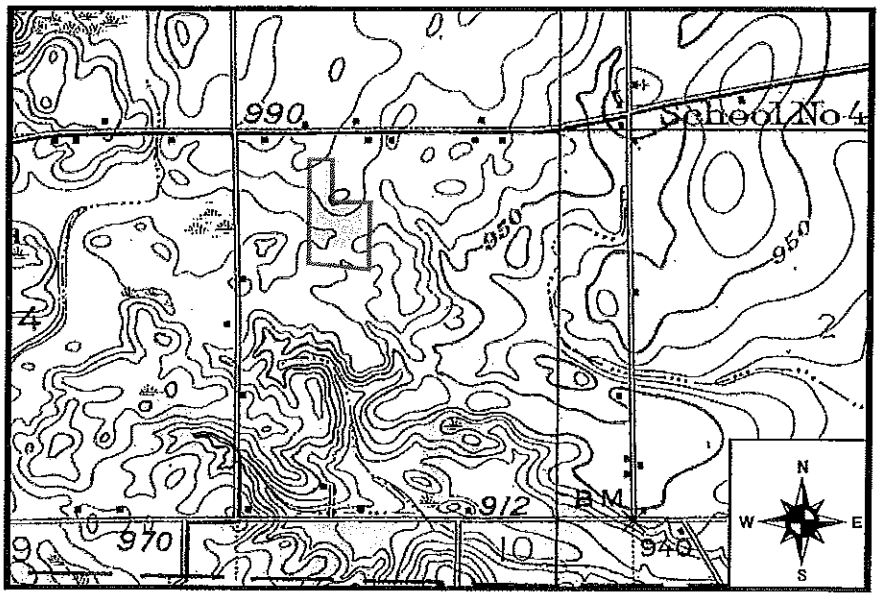


Figure 5. Portion of the USGS 1914 *Pioneer, Ohio 15 Minute Series (Topographic)* map showing the location of the project area.

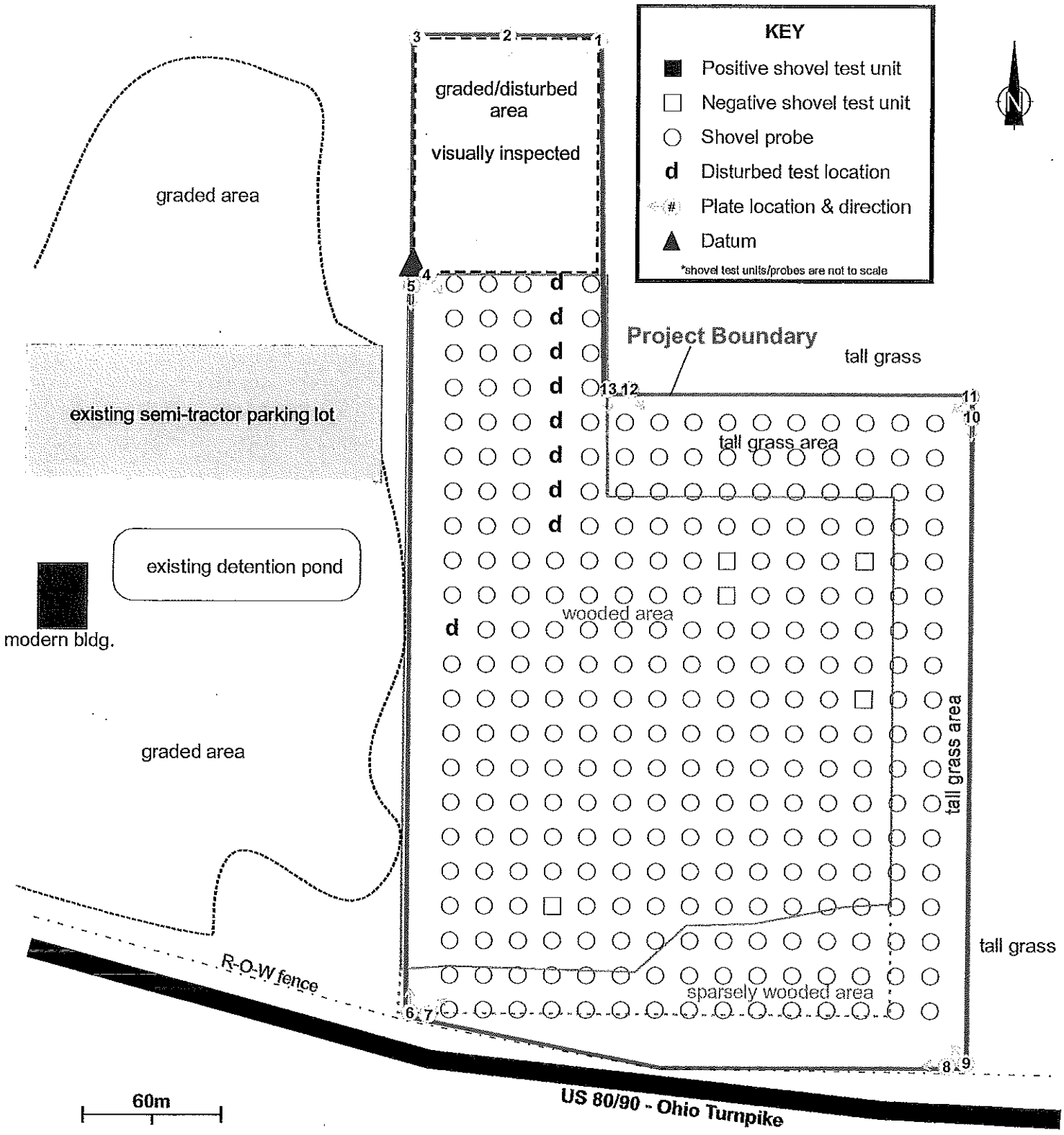


Figure 5. Fieldwork map of the project area showing the placement of shovel test units/ probes.

Plates

Plate 1. View from the northeast corner of the northern extension showing the visually inspected area, facing southwest.

Plate 2. View from the center of the northern extension showing the visually inspected area, facing south.

Plate 3. View from the northwest corner of the northern extension showing the visually inspected area, facing southeast.

Plate 4. View from the datum location, facing southeast.

Plate 5. View from the datum location, facing south.

Plate 6. View from the southwest corner of the project area, facing north.

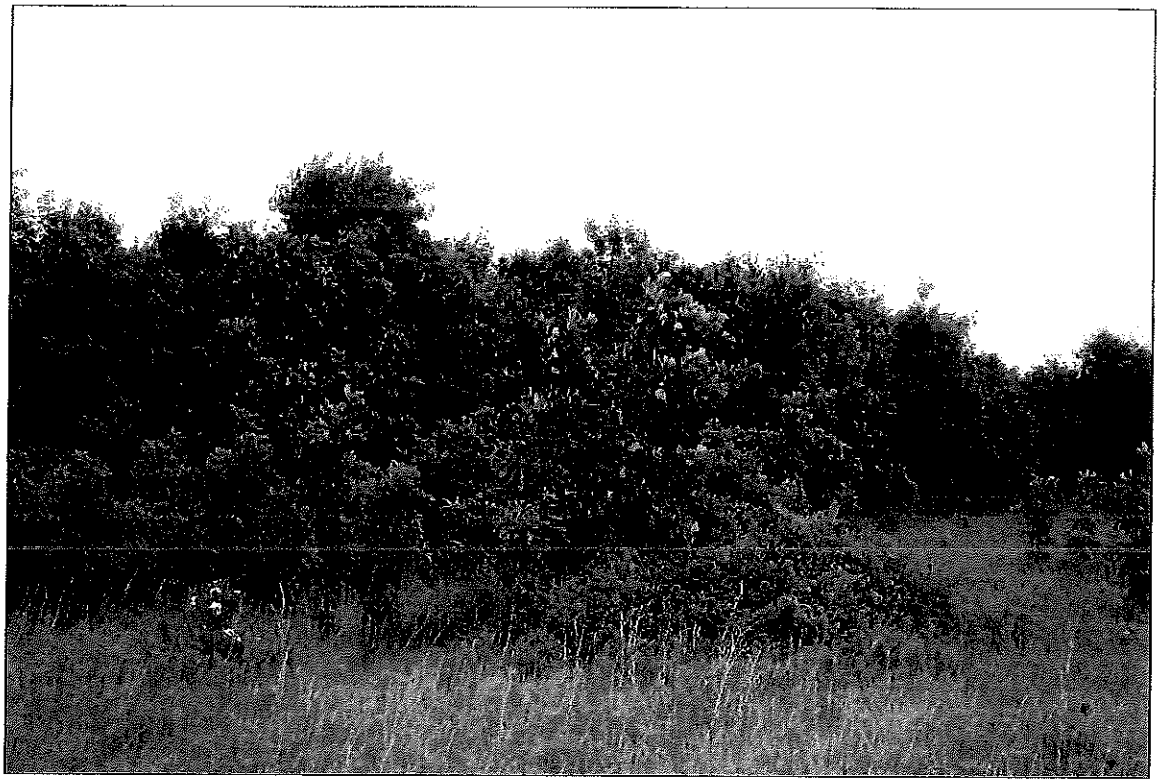


Plate 7. View from the southwest corner of the project area, facing northeast.

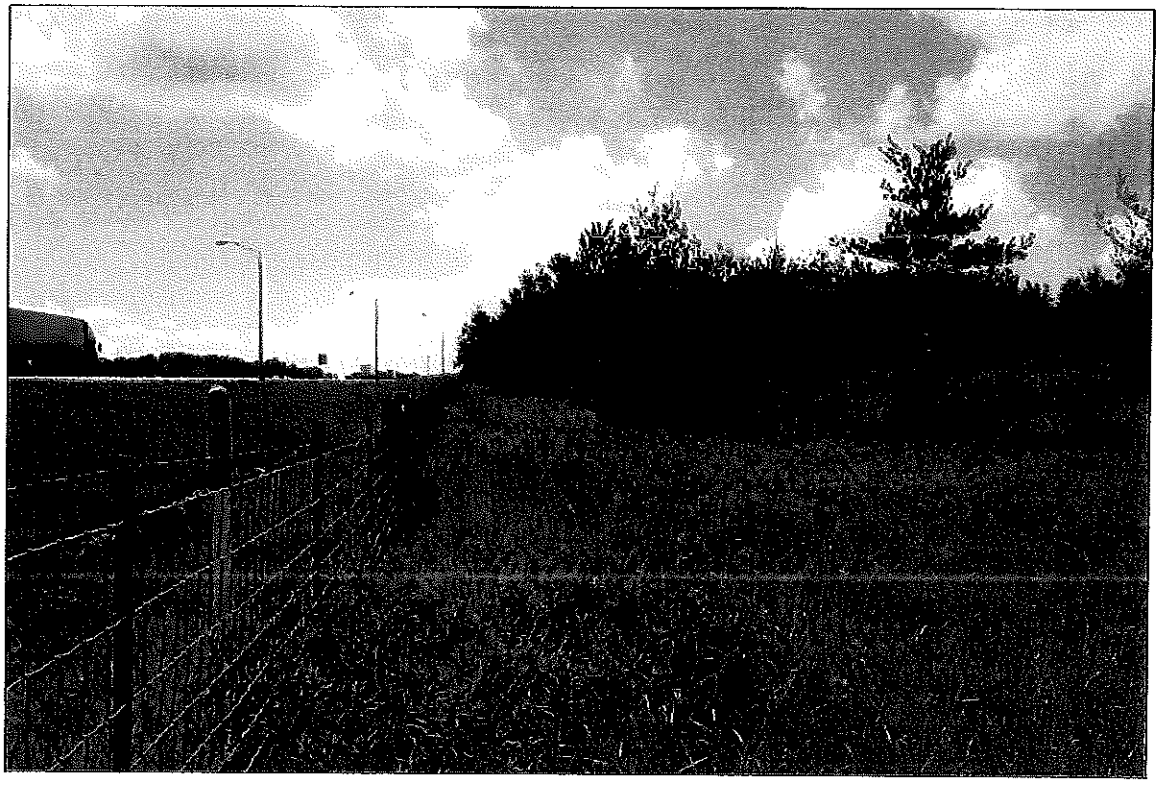


Plate 8. View from the southeast corner of the project area, facing west.

Plate 9. View from the southeast corner of the project area, facing northwest.

Plate 10. View from the northeast corner of the project area, facing south.

Plate 11. View from the northeast corner of the project area, facing southwest.

Plate 12. View from the north-central portion of the project area, facing southwest.

Plate 13. View from the north-central portion of the project area, facing south.

Plate 14. Example of disturbance encountered within the wooded portion of the project area.

Plate 15. View of shovel test unit 270m S, 60m E.

OTHER COORDINATION

Maumee Valley Planning Organization

Serving Defiance, Fulton, Henry, Paulding and Williams County

To: Environmental Coordination Agency

From: Dennis Miller

Date: April 18, , 2006

Applicant: Williams County Commissioners

Project Name: Flying J Travel Plaza Development

Project Description: Flying J proposes to develop a Travel Plaza on the northeast quadrant of Exit 2 (SR 49) on the Ohio Turnpike System. The development will require the construction of off-site water facilities to be owned and operated by the Northwest Township Water District. The water facilities will involve the construction of two wells, a water treatment plant, elevated storage tank and water distribution lines.

Program Title: Flying J Water Facilities

Proposed Federal Funding: $500,000

Source: CDBG Economic Development Funds

Proposed Non-Federal Funding: $1,000,000

Source: Other Public

Total Project Cost: $ 1,500,000

Maps Attached:

1300 E. Second St., Suite 200
Defiance, Ohio 43512-9918
Phone 419-784-3882
Fax 419-784-2061

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4127

(614) 469-6923
Fax: (614) 469-6919

May 1, 2007

Mr. Dennis Miller
Maumee Valley Planning Organization
1300 E. Second St.
Suite 200
Defiance, OH 43512-9918

Dear Mr. Miller:

This is in response to your April 18, 2007 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species within the vicinity of the proposed site. The proposed project involves the construction of a new Flying J Travel Plaza, as well as an off-site water facility including two wells, a water treatment plant, elevated storage tank and water distribution lines. The project is located at the intersection of State Route 49 and the Ohio Turnpike, Williams County, Ohio. Based on aerial photos of the site included with your letter, it appears that at least a portion of the area is composed of woods.

There are no Federal wilderness areas, wildlife refuges, or designated Critical Habitat within the vicinity of the proposed site.

In general, we recommend that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat, such as forests, streams, and wetlands. Best construction techniques should be used to minimize erosion, in particular, on slopes. All disturbed areas should be mulched and revegetated. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Buffalo District of the Corps of Engineers should be contacted for possible need of a Section 404 permit. We support and recommend mitigation activities that reduce the likelihood of invasive plant spread and encourage native plant colonization. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats. All disturbed areas in the project vicinity should be mulched and revegetated with native plant species.

ENDANGERED SPECIES COMMENTS: The proposed project lies within the range of the **Indiana bat** (*Myotis sodalis*), a Federally-listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. Summer habitat requirements for the species are not well defined but the following are considered important:

1. Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
2. Live trees (such as shagbark hickory and oaks) which have exfoliating bark.
3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.

Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed

above, we recommend that the habitat and surrounding trees be saved wherever possible. If the trees must be cut, further coordination with this office is requested to determine if surveys are warranted. Any survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office.

The project also lies within the range of the **Copperbelly Watersnake** (*Nerodia erythrogaster neglecta*), a Federally-listed threatened species. Habitat requirements for this species include lowland swamps or other warm, quiet waters (both seasonal and permanent), adjacent wooded migration corridors, adjacent upland slopes with underground hibernation sites below the frost line, and streams or rivers. If suitable habitat for this species is located on the site, further coordination with this office will be necessary.

The proposed project lies within the range of the white cat's paw pearly mussel, clubshell, northern riffleshell, and rayed bean, Federally listed endangered and candidate species. Due to the project type, location, and onsite habitat, these species would not be expected within the project area, and no impacts to these species are anticipated. Relative to these species, this precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy. Please note that consultation under section 7 of the ESA may be warranted for this project since suitable habitat for the Indiana bat may be impacted by this project. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

If you have questions, or if we may be of further assistance in this matter, please contact Megan Seymour at extension 16 in this office.

Sincerely,

Mary Knapp

Mary Knapp, Ph.D.
Supervisor

cc: ODNR, DOW, SCEA Unit, Columbus, OH

(614) 469-6923
Fax: (614) 469-6919

May 1, 2007

Mr. Dennis Miller
Maumee Valley Planning Organization
1300 E. Second St.
Suite 200
Defiance, OH 43512-9918

Dear Mr. Miller:

This is in response to your April 18, 2007 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species within the vicinity of the proposed site. The proposed project involves the construction of a new Flying J Travel Plaza, as well as an off-site water facility including two wells, a water treatment plant, elevated storage tank and water distribution lines. The project is located at the intersection of State Route 49 and the Ohio Turnpike, Williams County, Ohio. Based on aerial photos of the site included with your letter, it appears that at least a portion of the area is composed of woods.

There are no Federal wilderness areas, wildlife refuges, or designated Critical Habitat within the vicinity of the proposed site.

In general, we recommend that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat, such as forests, streams, and wetlands. Best construction techniques should be used to minimize erosion, in particular, on slopes. All disturbed areas should be mulched and revegetated. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Buffalo District of the Corps of Engineers should be contacted for possible need of a Section 404 permit. We support and recommend mitigation activities that reduce the likelihood of invasive plant spread and encourage native plant colonization. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats. All disturbed areas in the project vicinity should be mulched and revegetated with native plant species.

ENDANGERED SPECIES COMMENTS: The proposed project lies within the range of the **Indiana bat** (*Myotis sodalis*), a Federally-listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. Summer habitat requirements for the species are not well defined but the following are considered important:

1. Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
2. Live trees (such as shagbark hickory and oaks) which have exfoliating bark.
3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.

Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above, we recommend that the habitat and surrounding trees be saved wherever possible. If the trees must be cut, further coordination with this office is requested to determine if surveys are warranted. Any survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office.

The project also lies within the range of the **Copperbelly Watersnake** (*Nerodia erythrogaster neglecta*), a Federally-listed threatened species. Habitat requirements for this species include lowland swamps or other warm, quiet waters (both seasonal and permanent), adjacent wooded migration corridors, adjacent upland slopes with underground hibernation sites below the frost line, and streams or rivers. If suitable habitat for this species is located on the site, further coordination with this office will be necessary.

The proposed project lies within the range of the white cat's paw pearly mussel, clubshell, northern riffleshell, and rayed bean, Federally listed endangered and candidate species. Due to the project type, location, and onsite habitat, these species would not be expected within the project area, and no impacts to these species are anticipated. Relative to these species, this precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy. Please note that consultation under section 7 of the ESA may be warranted for this project since suitable habitat for the Indiana bat may be impacted by this project. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

If you have questions, or if we may be of further assistance in this matter, please contact Megan Seymour at extension 16 in this office.

Sincerely,

Mary Knapp, Ph.D.
Supervisor

cc: ODNR, DOW, SCEA Unit, Columbus, OH

Dennis Miller

From: "Bankey, Mindy" <Mindy.Bankey@dnr.state.oh.us>
To: <dpmiller72@earthlink.net>
Sent: Friday, May 11, 2007 10:54 AM
Attach: oledata.mso
Subject: 07-0100; Flying J Development/Water Facilities

ODNR COMMENTS TO Dennis Miller, Maumee Valley Planning Organization, 1300 East Second Street, Suite 200, Defiance County, Ohio 43512-9918.

Location: The project is located on the northeast quadrant of Exit 2 (SR 49) on the Ohio Turnpike System.

Project: The applicant, Flying J, proposes to develop a Travel Plaza. The development will require the construction of off-site water facilities to be owned and operated by the Northwest Township Water District. The water facilities will involve the construction of two wells, a water treatment plant, elevated storage tank, and water distribution lines.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Rare and Endangered Species: The ODNR, Division of Natural Areas and Preserves, Natural Heritage Database contains no records of rare species or unique natural features within the proposed project, and there are no state nature preserves or scenic rivers in the vicinity of the site.

Fish and Wildlife: The ODNR, Division of Wildlife (DOW) has the following comments.

The project is in the historical range of the Indiana bat (*Myotis sodalis),* a state and federally endangered species. If it is necessary to remove any trees to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the copperbelly water snake (*Nerodia erythrogaster neglecta*), a state endangered and federally threatened species. It is recommended the applicant contact the U.S. Fish and Wildlife Service for guidance regarding these species.

The project is in the historical range of the clubshell mussel (*Pleurobema clava*), a state and federally endangered species, the northern riffleshell mussel (*Epioblasma torulosa rangiana*), a state and federally endangered species, the rayed bean mussel (*Villosa fabalis*), a state endangered and federal candidate species, and the white catspaw (*Epioblasma obliquata perobliqua*), a state and federally endangered mussel species. If it is necessary to do in-water work to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the eastern purplish copper (*Lycaena helloides*), a state endangered butterfly species. If wetland habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

The project is also within the historical range of the blue-spotted salamander (*Ambystoma laterale),* a state endangered species. If oak savanna habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

Water Resources: The ODNR, Division of Water has the following comments.

The cone of depression that will develop around the two large production wells may adversely impact domestic and farm wells near the

development. Some provision should be made for the possibility of well replacement or pump lowering.

ODNR appreciates the opportunity to provide these comments. Please contact Mindy Bankey at 614.265.6836 if you have questions about these comments or need additional information.

Mindy Bankey
Environmental Administrator
Division of Real Estate & Land Management
Ohio Department of Natural Resources
2045 Morse Rd, C4
Columbus, Ohio 43229-6693
614.265.6836
Fax 614.267.4764

Dennis Miller

From: "Bankey, Mindy" <Mindy.Bankey@dnr.state.oh.us>
To: <dpmiller72@earthlink.net>
Sent: Friday, May 11, 2007 10:54 AM
Attach: oledata.mso
Subject: 07-0100; Flying J Development/Water Facilities

ODNR COMMENTS TO Dennis Miller, Maumee Valley Planning Organization, 1300 East Second Street, Suite 200, Defiance County, Ohio 43512-9918.

Location: The project is located on the northeast quadrant of Exit 2 (SR 49) on the Ohio Turnpike System.

Project: The applicant, Flying J, proposes to develop a Travel Plaza. The development will require the construction of off-site water facilities to be owned and operated by the Northwest Township Water District. The water facilities will involve the construction of two wells, a water treatment plant, elevated storage tank, and water distribution lines.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Rare and Endangered Species: The ODNR, Division of Natural Areas and Preserves, Natural Heritage Database contains no records of rare species or unique natural features within the proposed project, and there are no state nature preserves or scenic rivers in the vicinity of the site.

Fish and Wildlife: The ODNR, Division of Wildlife (DOW) has the following comments.

The project is in the historical range of the Indiana bat (*Myotis sodalis),* a state and federally endangered species. If it is necessary to remove any trees to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the copperbelly water snake (*Nerodia erythrogaster neglecta*), a state endangered and federally threatened species. It is recommended the applicant contact the U.S. Fish and Wildlife Service for guidance regarding these species.

The project is in the historical range of the clubshell mussel (*Pleurobema clava*), a state and federally endangered species, the northern riffleshell mussel (*Epioblasma torulosa rangiana*), a state and federally endangered species, the rayed bean mussel (*Villosa fabalis*), a state endangered and federal candidate species, and the white catspaw (*Epioblasma obliquata perobliqua*), a state and federally endangered mussel species. If it is necessary to do in-water work to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the eastern purplish copper (*Lycaena helloides*), a state endangered butterfly species. If wetland habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

The project is also within the historical range of the blue-spotted salamander (*Ambystoma laterale)*, a state endangered species. If oak savanna habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

Water Resources: The ODNR, Division of Water has the following comments.

The cone of depression that will develop around the two large production wells may adversely impact domestic and farm wells near the

development. Some provision should be made for the possibility of well replacement or pump lowering.

ODNR appreciates the opportunity to provide these comments. Please contact Mindy Bankey at 614.265.6836 if you have questions about these comments or need additional information.

Mindy Bankey
Environmental Administrator
Division of Real Estate & Land Management
Ohio Department of Natural Resources
2045 Morse Rd, C4
Columbus, Ohio 43229-6693
614.265.6836
Fax 614.267.4764

Dennis Miller

From: "Bankey, Mindy" <Mindy.Bankey@dnr.state.oh.us>
To: "Navarro, John" <John.Navarro@dnr.state.oh.us>; "Jenkins, Becky" <Becky.Jenkins@dnr.state.oh.us>; "Woischke, Debbie" <Debbie.Woischke@dnr.state.oh.us>; "Grieszmer, Butch" <Butch.Grieszmer@dnr.state.oh.us>; "Emmons, Jeff" <Jeff.Emmons@dnr.state.oh.us>; "Gerdes, Blaine" <Blaine.Gerdes@dnr.state.oh.us>; "Adkins, Matt" <matt.adkins@dnr.state.oh.us>; "Taylor, Melissa" <Melissa.Taylor@dnr.state.oh.us>; "Sanders, Chad" <Chad.Sanders@dnr.state.oh.us>; "Miller, Phil" <Phil.Miller@dnr.state.oh.us>; "Lee, Tara" <Tara.Lee@dnr.state.oh.us>; "Pavey, Rick" <Rick.Pavey@dnr.state.oh.us>; "Livchak, Constance" <Constance.Livchak@dnr.state.oh.us>; "Mitch, Brian" <Brian.Mitch@dnr.state.oh.us>; "Bopp, Bill" <Bill.Bopp@dnr.state.oh.us>
Sent: Friday, May 11, 2007 10:57 AM
Attach: oledata.mso
Subject: FW: 07-0100; Flying J Development/Water Facilities

-----Original Message-----
From: Bankey, Mindy
Sent: Friday, May 11, 2007 10:54 AM
To: 'dpmiller72@earthlink.net'
Subject: 07-0100; Flying J Development/Water Facilities

ODNR COMMENTS TO Dennis Miller, Maumee Valley Planning Organization, 1300 East Second Street, Suite 200, Defiance County, Ohio 43512-9918.

Location: The project is located on the northeast quadrant of Exit 2 (SR 49) on the Ohio Turnpike System.

Project: The applicant, Flying J, proposes to develop a Travel Plaza. The development will require the construction of off-site water facilities to be owned and operated by the Northwest Township Water District. The water facilities will involve the construction of two wells, a water treatment plant, elevated storage tank, and water distribution lines.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Rare and Endangered Species: The ODNR, Division of Natural Areas and Preserves, Natural Heritage Database contains no records of rare species or unique natural features within the proposed project, and there are no state nature preserves or scenic rivers in the vicinity of the site.

Fish and Wildlife: The ODNR, Division of Wildlife (DOW) has the following comments.

The project is in the historical range of the Indiana bat (*Myotis sodalis),* a state and federally endangered species. If it is necessary to remove any trees to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the copperbelly water snake (*Nerodia erythrogaster neglecta*), a state endangered and federally threatened species. It is recommended the applicant contact the U.S. Fish and Wildlife Service for guidance regarding these species.

The project is in the historical range of the clubshell mussel (*Pleurobema clava*), a state and federally endangered species, the northern riffleshell mussel (*Epioblasma torulosa rangiana*), a state and federally endangered species, the rayed bean mussel (*Villosa fabalis*), a state endangered and federal candidate species, and the white catspaw (*Epioblasma obliquata perobliqua*), a state and federally

endangered mussel species. If it is necessary to do in-water work to complete the project, it is recommended the applicant first contact the U.S. Fish and Wildlife Service for guidance.

The project is also within the historical range of the eastern purplish copper (*Lycaena helloides*), a state endangered butterfly species. If wetland habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

The project is also within the historical range of the blue-spotted salamander (*Ambystoma laterale)*, a state endangered species. If oak savanna habitat is in the vicinity of the project area, the applicant should be observant for this species. If this species is encountered during construction of the project, work should immediately be stopped, and the DOW should be contacted.

Water Resources: The ODNR, Division of Water has the following comments.

The cone of depression that will develop around the two large production wells may adversely impact domestic and farm wells near the development. Some provision should be made for the possibility of well replacement or pump lowering.

ODNR appreciates the opportunity to provide these comments. Please contact Mindy Bankey at 614.265.6836 if you have questions about these comments or need additional information.

Mindy Bankey
Environmental Administrator
Division of Real Estate & Land Management
Ohio Department of Natural Resources
2045 Morse Rd, C4
Columbus, Ohio 43229-6693
614.265.6836
Fax 614.267.4764

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

PROJECT: **Flying J Travel Plaza (FY 2007 CDBG ED Project)**

ACTIVITIES: **1) New Construction**
2) Water Facility Improvements
3) Interim Costs

FUNDING: **FY 2007 Small Cities CDBG Economic Development Program**
Grant Agreement #B-E-07-079-1
($490,000 for Activity #2, Water Facilities)

FINDING OF NO SIGNIFICANT IMPACT (FONSI) ON THE ENVIRONMENT

__X__ I find that this Project activity **IS NOT** a major federal action which would significantly affect the quality of the human environment and an Environmental Impact Statement is not required.

_____ I find that this Project activity **IS** a major federal action, which would significantly affect the quality of the human environment, and an Environmental Impact Statement is required.

Environmental Review Officer:

_____ July 18, 2007
Duane F. Votaw, President Date
Williams County Board of Commissioners

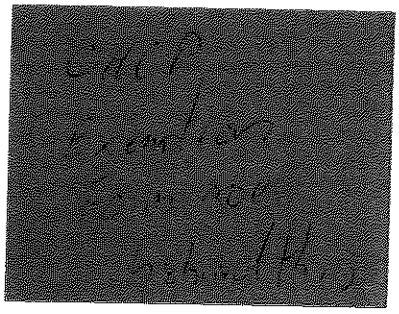
Certification of Completion of Environmental Review Process

I hereby certify that this Project activity has undergone a complete Environmental Review.

Environmental Review Officer:

_____ July 18, 2007
Duane F. Votaw, President Date
Williams County Board of Commissioners

FINDING OF CATEGORICAL EXCLUSION/EXEMPTION



COMBINED NOTICE

NOTICE TO PUBLIC OF A
FINDING OF NO SIGNIFICANT IMPACT ON THE ENVIRONMENT (FONSI)
COMBINED NOTICE

Publication Date: July 18, 2007

Williams County Commissioners
One Courthose Square
Bryan, Ohio 43506

Contact: Dennis Miller, Executive Director
Phone: (419) 784-3882

To All Interested Persons, Agencies, and Groups:

The Williams County Commissioners propose to request that the State of Ohio release Federal funds under Section 104 (g) of Title I of the Housing and Community Development Act of 1974, as amended; Section 288 of Title II of the Cranston Gonzales National Affordable Housing Act (NAHA), as amended; and/or Title IV of the Stewart B. McKinney Homeless Assistance Act, as amended; to be used for the following project(s):

Project Name: Flying J Travel Plaza, New Construction Activity
Source of Federal Funds: None
Purpose or Nature of the Project: To develop a Travel Plaza at Exit 2 of I80/I90. The project will create 64 low and moderate income employment opportunities.
Identification of Single or Multi-Year Project: Multi-Year
Location: Northeast Quadrant of Exit 2 on the I80/I90 , Edon, Ohio 43512
Estimated Cost of Project: $12,000,000; ($12,000,000 Equity)
Project Name: Flying J Travel Plaza, Water and Sewer Facilities Activity
Source of Federal Funds: CDBG Economic Development
Purpose or Nature of the Project: To develop a Travel Plaza at Exit 2 of I80/I90. The project will create 64 low and moderate income employment opportunities.
Identification of Single or Multi-Year Project: Multi-Year
Location: Northeast Quadrant of Exit 2 on the I80/I90 , Edon, Ohio 43512
Estimated Cost of Project: $2,800,000; ($490,000 CDBG Economic Development, $250,000 Flying J Tap Fee, $2,050,000 Northwest Water District Bond)
Project Name: Flying J Travel Plaza, Interim Costs Activity
Source of Federal Funds: None
Purpose or Nature of the Project: To develop a Travel Plaza at Exit 2 of I80/I90. The project will create 64 low and moderate income employment opportunities.
Identification of Single or Multi-Year Project: Multi-Year
Location: Northeast Quadrant of Exit 2 on the I80/I90 , Edon, Ohio 43512
Estimated Cost of Project: $235,000; ($235,000 Northwest Water District Bond)
Project Name: Flying J Travel Plaza, General Administration Activity
Source of Federal Funds: None
Purpose or Nature of the Project: To develop a Travel Plaza at Exit 2 of I80/I90. The project will create 64 low and moderate income employment opportunities.
Identification of Single or Multi-Year Project: Multi-Year

Location: Northeast Quadrant of Exit 2 on the I80/I90 , Edon, Ohio 43512
Estimated Cost of Project: $10,000; ($10,000 CDBG Economic Development)

The Williams County Commissioners has determined that the project(s) will have no significant impact on the environment. Therefore, an Environmental Impact Statement under the National Environmental Policy Act of 1969, as amended is not required.

The (Williams County Commissioners has prepared an Environmental Review Record (ERR) for each of the projects listed above. The ERR(s) documents the environmental review of the project(s). The ERR(s) is (are) on file and available for the public's examination and copying, upon request, between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday (except holidays) at the above address.

No further environmental review of the project(s) will be conducted prior to the request for release of Federal funds.

The Williams County Commissioners plans to undertake the project(s) described above with the Federal funds cited above. Any interested person, agency, or group wishing to comment on the project or disagreeing with this Finding of No Significant Impact decision may submit written comments for consideration to the Williams County Commissioners at the above listed address by 4:00 p. m. on August 2, 2007. which is at least 15 days after the publication of this combined notice. A notice regarding the responsible entity's intent to request the release of funds is listed immediately below.

NOTICE OF INTENT TO REQUEST RELEASE OF FUNDS (NOI/RROF)

To All Interested Persons, Agencies, and Groups:

On or about, but not before, August 3, 2007, the Williams County Commissioners will submit a request to the State of Ohio for the release of Federal funds under Section 104 (g) of Title I of the Housing and Community Development Act of 1974, as amended; Section 288 of Title II of the Cranston Gonzales National Affordable Housing Act (NAHA), as amended; and/or Title IV of the Stewart B. McKinney Homeless Assistance Act, as amended; to be used for the project(s) listed above.

The Williams County Commissioners certifies to the State of Ohio that Duane F. Votaw, in his capacity as President of the Williams County Commissioners, consents to accept the jurisdiction of Federal courts if an action is brought to enforce responsibilities in relation to the environmental review process and that these responsibilities have been satisfied.

The legal effect of the certification is that upon its approval, the Williams County Commissioners may use the Federal funds, and the State of Ohio will have satisfied its responsibilities under the National Environmental Policy Act of 1969, as amended.

The State of Ohio will accept an objection to its approval of the release of funds and

acceptance of the certification only if it is on one of the following grounds: (a) the certification was not, in fact, executed by the responsible entity's Certifying Officer; (b) the responsible entity has failed to make one of the two findings pursuant to Section 58.40 or to make the written determination required by section 58.35, 58.47, or 58.53 for the project, as applicable; c) the responsible entity has omitted one or more of the steps set forth at subpart E of 24 CFR Part 58 for the preparation, publication, and completion of an Environmental Assessment; d) the responsible entity has omitted one or more of the steps set forth at subparts F and G of 24 CFR Part 58 for the conduct, preparation, publication, and completion of an Environmental Impact Statement; e) the recipient has committed funds or incurred costs not authorized by 24 CFR Part 58 before release of funds and approval of the environmental certification by the State; or f) another federal agency, acting pursuant to 40 CFR Part 1504, has submitted a written finding that the project is unsatisfactory from the standpoint of environmental quality.

Written objections must meet the conditions and procedures set forth in subpart II of 24 CFR Part 58, and be addressed to: State of Ohio Department of Development; Office of Housing and Community Partnerships; Environmental Officer; P. 0. Box 1001; Columbus, Ohio 43216-1001.

Objections to the Release of Funds on bases other than those stated above will not be considered by the State of Ohio. No objections received after August 21, 2007 (which is 15 days after it is anticipated that the State will receive a request for release of funds) will be considered by the State of Ohio.

The address of the certifying officer is;
Duane F. Votaw, President
Williams County Commissioners
One Courthose Square
Bryan, Ohio 43506

Combined Notice 03-06

NOTICE TO THE PUBLIC OF A FINDING OF NO SIGNIFICANT IMPACT AN THE ENVIRONMENT (FONSI)
AND
NOTICE OF INTENT TO REQUEST RELEASE OF FUNDS

TIPS

- This notice is to be published in a newspaper of general circulation in the non-legal section when 1) the level of environmental review is determined to be **Environmental Assessment per 58 CFR 58.36.**

- This notice is to be published when the environmental record is completed and signed by the preparer and the certifying officer.

- The notice must appear at least once. The grantee must obtain a clipping of the notice including evidence of the date of publication.

- The notice must specify, at a minimum, a 15-calendar day period for persons to evaluate and comment on the record. (The first day the notice is published is considered day 0. If the 15th day falls on a weekend or holiday, the period must be extended to the next business day.) The record must be readily available for public inspection within the jurisdiction of the grantee on the first day of the comment period.

- The notice must specify, at a minimum, an additional 15-calendar day period for persons to object to the release of funds. There must be a minimum of 3 calendar days between the last date of the local comment period and the first date of the objection period. During this time, the grantee mails a copy of a **Request for Release of Funds and Certification** to the State of Ohio.

- **Example:**

	Date
Publication Date	1st
1st day of Local Comment Period	2nd
Last day of the Local Comment Period	16th
Mailing time for Request for Release of Funds and Certification (RROF and Cert.)	17th – 20th
Date State of Ohio Receives RROF and Certification	20th
1st day of Objection Period	21st
Last day of Objection Period	6th
Date State of Ohio can Release if no Objections are received	7th

- The notice must use at a minimum the prescribed format and the title of the notice must be published.

- Listed below is the minimum format required for the notice. The grantee is to fill in the appropriate information between the parentheses ().

INSTRUCTIONS FOR PUBLISHING A COMBINED NOTICE OF A NOTICE TO PUBLIC OF A FINDING OF NO SIGNIFICANT IMPACT ON THE ENVIRONMENT (FONSI) AND NOTICE OF INTENT TO REQUEST A RELEASE OF FUNDS (NOI/RROF)

- This notice is a combination of 2 separate notices. These notices may be published separately, if the responsible entity desires. This notice must be published in a newspaper of general circulation in the non-legal section, by the grantee for all projects that have been determine to require an Environmental Assessment and the review resulted in a determination that the project would not have a significant effect on the environment (FONSI), and therefore, no additional environmental studies are warranted. This is the format by which this notice is required to be published. The titles that appear in the notice are required to be published, as well as the body of the notice.

- No portion of the project (including activities within the project that if undertaken alone would be exempt or financed with non-federal funds) may move forward. No funds may be committed until the complete Environmental Review process is concluded, (I. e. the grantee receives from the State, a Release of Funds.) The result of moving forward with the project without the release will result in the State determining the use of funds is ineligible.

- Insert local information and dates in the areas identified with underlined parentheses underlined. Explanations on how to determine the dates are listed below:

  Date 1: Last Date the Responsible Entity will Receive Comments for Consideration.
  To determine this date, count 15 days forward starting the day after the publication is to appear in the newspaper. (If this date is on a weekend or holiday, use the next business working day as this date.)

  Date 2: Date the Responsible Entity Plans to Submit a Request For Release of Funds and Certification.

  Date 3: Last Day the Public May Object to the State Releasing the Community's Funds.

- The responsible entity is required to consider all comments received during the published local comment period and revise their environmental review record prior to certifying the record is complete and requesting a release of funds from the State. The responsible entity's Request for Release of Funds and Certification (RROF) can be signed by the certifying officer after due consideration of all comments. Therefore, the certifying officer can sign on or after, but not before, Date 2, to be valid.

- Upon the signature on the RROF, the community can submit a Request for Release of Funds and Certification to the State. A copy(ies) of the notice(s) (FONSI/NOI/RROF), as it actually appeared in the newspaper, must accompany this RROF.

- Upon the State's receipt of the RROF, the State reviews the submission for accuracy of the publication and appropriateness of the level of environmental finding. The community can perform a self-check on the submission prior to sending it to the State by completing a Completeness Screening of Environmental Request for Release of Funds and Certification for Environmental Assessment Projects.

- Upon receipt of a valid submission of a RROF, the State is required to receive and consider any objections to the release of funds. Objections will be resolved in coordination with the community. Upon resolution of objections or if the State did not receive any objections within the 15 days objection period, the State will issue the community a Release of Funds (ROF). Upon the receipt of this release, the project can proceed and funds for the project may be committed.

- Any questions regarding the publication of the NOI/RROF notice or the ROF process can be answered by contacting one of the State's Environmental Review Specialist at (614) 466-2285.

- All correspondence should addressed to: Ohio Department of Development; Office of Housing and Community Partnerships (OHCP); Environmental Review Specialist; P. O. Box 1001; Columbus, Ohio 43216-1001; (614) 466 - 2285