BIPPUS AREA

PRELIMINARY FEASIBILITY STUDY

FOR

WASTEWATER COLLECTION AND TREATMENT

TOWN OF BIPPUS
PRELIMINARY FEASIBILITY STUDY
WASTEWATER COLLECTION AND TREATMENT

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1.	SAMPLING RESULTS
2.	PUBLIC PARTICIPATION

CHAPTER 1
PROJECT PLANNING AREA

LOCATION

The Town of Bippus is an unincorporated community located in northwest Huntington County in northeast Indiana. The Town is located about four miles south of State Route 114, 2 miles north of State Road 16 on State Road 105. Figure 1-1 is a United States Geological Survey topographical map showing the community's location. Figure 1-2 is a map of the community.

ENVIRONMENTAL RESOURCES

The topography of Bippus can be described as flat with an approximate ten foot variation in elevation. Pockets of higher ground can be found in the community with no discernible fall in any one direction.

The climate of the area is described as humid, temperate, and continental. Summers are warm and humid, and winters are moderately severe and marked by frequent and sudden changes in temperature. The average winter temperature is 28° F and the average daily minimum temperature is 20° F. In summer, the average temperature is 72° F with an average daily maximum temperature of 84° F. Average annual precipitation is about 22", with the heaviest rainfall period occurring between April and September.

Groundwater supplies most of the drinking water in Huntington County. The average depth of the wells in the Bippus area is approximately 125 feet. During periods of high groundwater, high water can be as high as 9 inches below the surface.

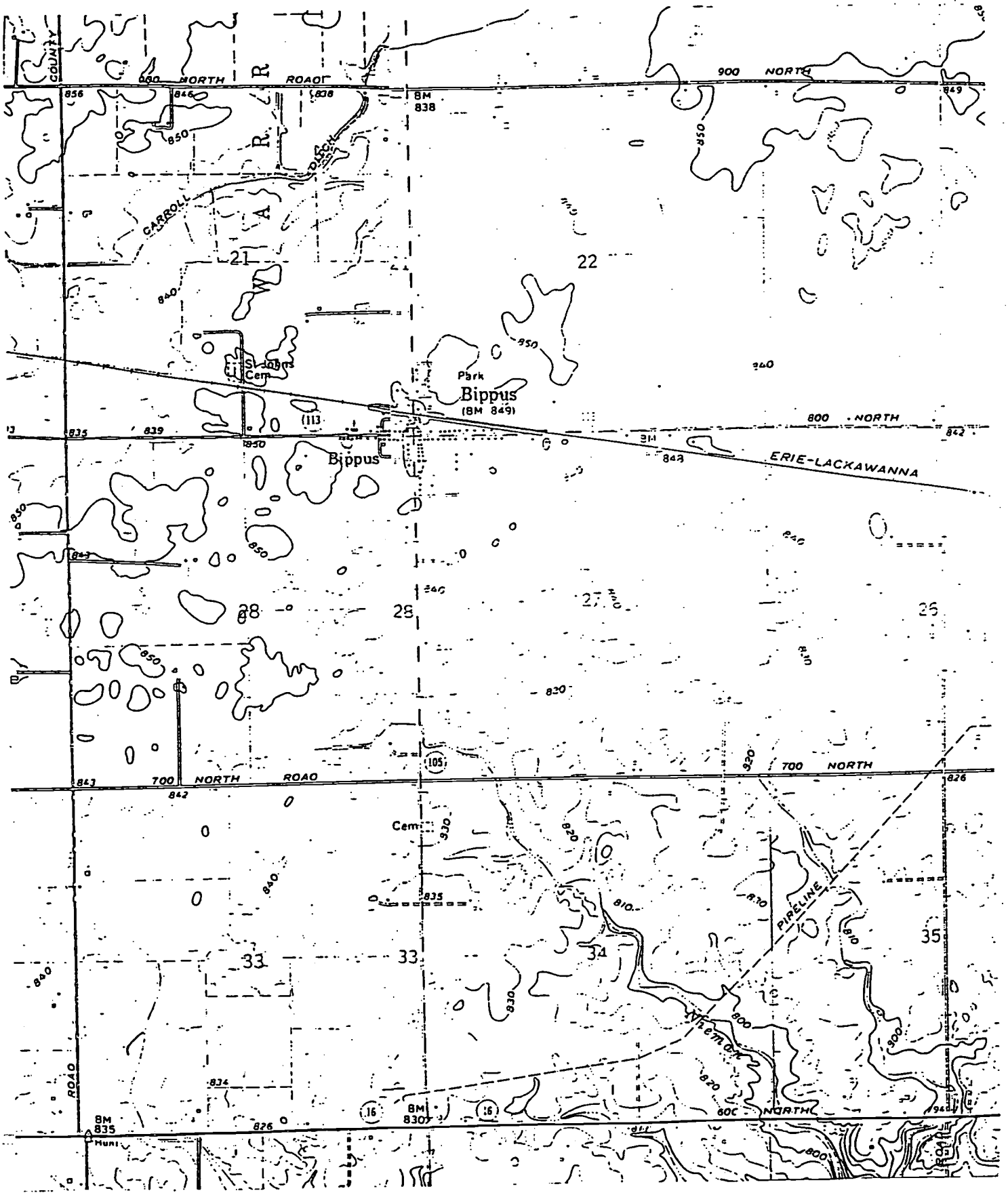
The predominate soil type is the Blount-Pewamo series, which is characterized as deep, nearly level and gently sloping and somewhat poorly drained to very poorly drained. The U.S. Department of Agriculture Soil Survey describes this soil as severely limited as sites for septic tank absorption fields because of the wetness and slow permeability. Figure 1-3 is a soils map for the community.

The major land resource is farmland. There are no historic sites, endangered species/critical habitats, or other resources of an environmental nature which will be affected by this project. Farmland will be affected depending on the site chosen for the wastewater treatment facilities. Figure 1-4 is a map showing the floodplain areas in the community. Figure 1-5 is a map showing the wetlands in the area.

GROWTH AREAS AND POPULATION TRENDS

Because the community of Bippus is unincorporated, it is not possible to determine a trend in historical populations. Bippus is contained in several census tracts, and historical data by tract is not available. The 1990 population in Bippus is estimated at 162 people based on a comparison of census tract populations and the aerial photography. Huntington County has generally experienced an increasing population since the 1950's;

FIGURE 1-1
PROJECT LOCATION



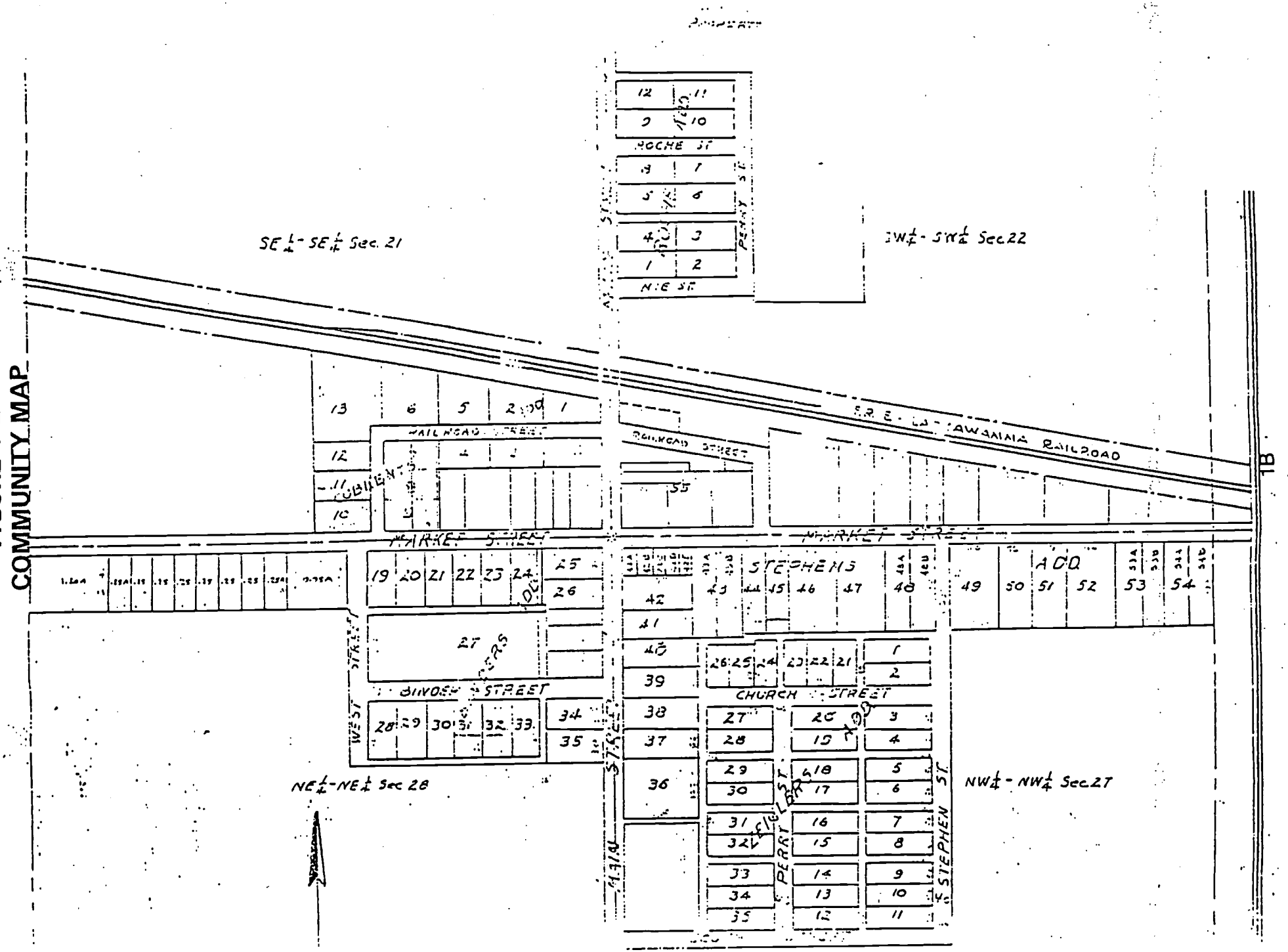


FIGURE 1-2
COMMUNITY MAP
SE¼ - SE¼ Sec. 21
SW¼ - SW¼ Sec. 22
NE¼ - NE¼ Sec 28
NW¼ - NW¼ Sec. 27
ROCHE ST
PERRY ST
NILE ST
RAILROAD STREET
MARKET STREET
CHURCH STREET
DIVOSE STREET
WEST STREET
ST. STEPHEN ST
PERRY LANE
S.E.C. - SAVANNAH RAILROAD
STEPHENS
ADD
1B

FIGURE 1-3
SOILS MAP

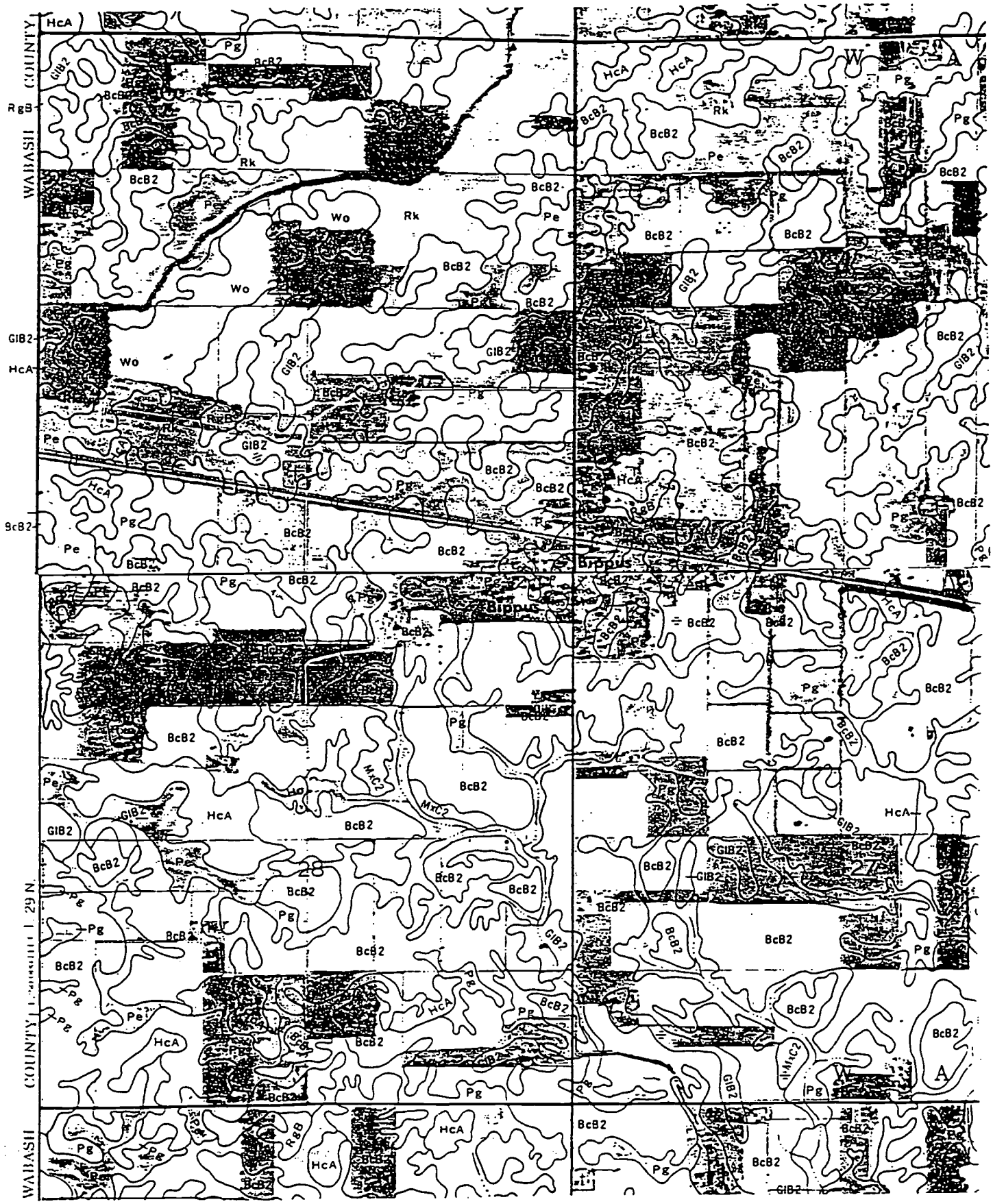
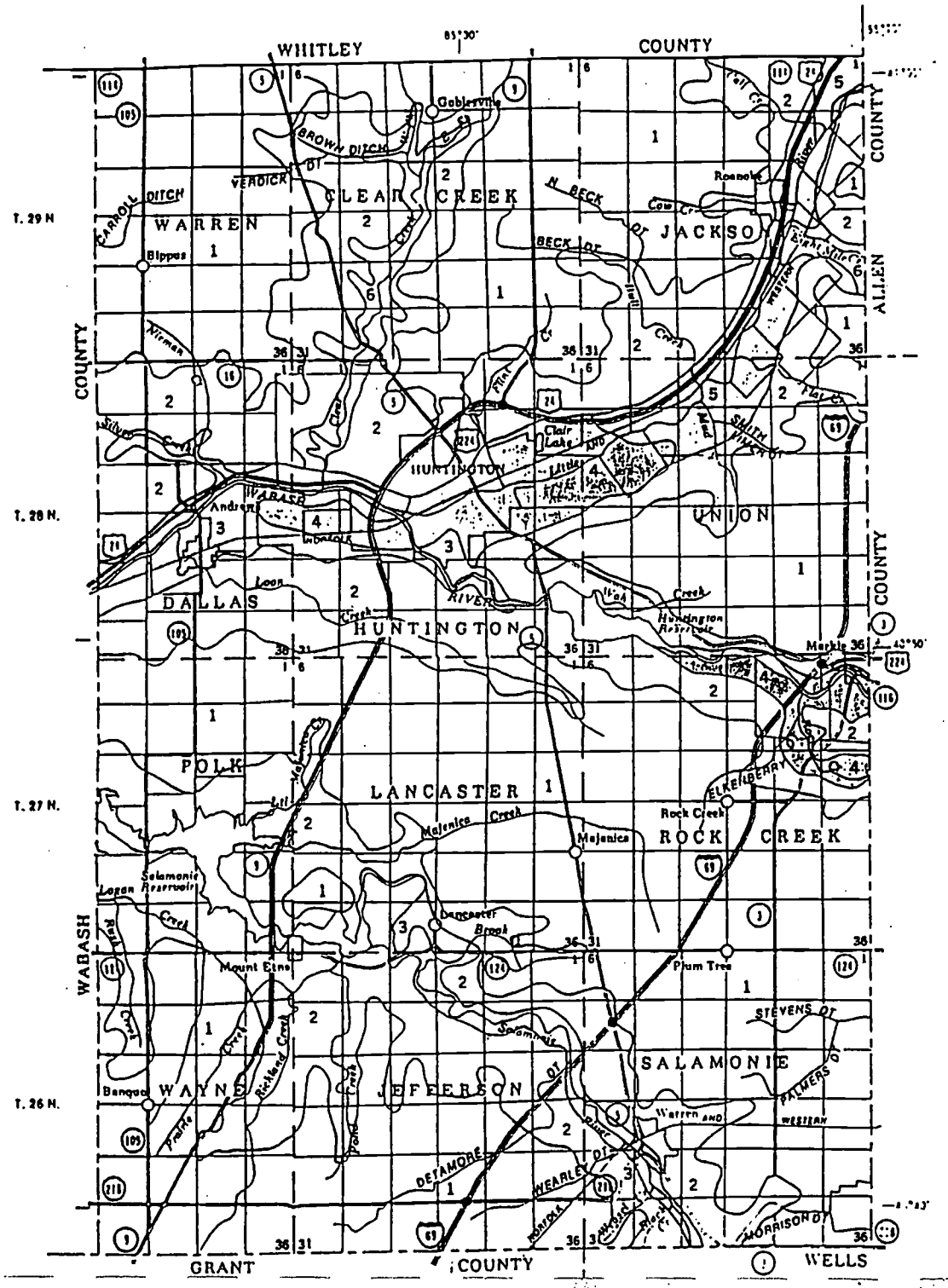


FIGURE 1-3
SOILS MAP



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION
INDIANA DEPARTMENT OF NATURAL RESOURCES
SOIL AND WATER CONSERVATION COMMITTEE

GENERAL SOIL MAP

HUNTINGTON COUNTY, INDIANA

Scale 1:190,080

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 6 Kilometers

SOIL LEGEND*

1	Blount-Pewamo: Deep, nearly level and gently sloping, somewhat poorly drained and very poorly drained, medium textured and moderately fine textured soils formed in calcareous glacial till
2	Morley-Blount-Pewamo: Deep, steep to nearly level, well drained, somewhat poorly drained, and very poorly drained, medium textured and moderately fine textured soils formed in calcareous glacial till
3	Genesee-Ockley-Fox: Deep or moderately deep over sand and gravel, nearly level to moderately sloping, well drained, medium textured soils formed in stratified alluvial and glacial outwash sediments
4	Randolph-Millsdale-Milton: Moderately deep, nearly level to strongly sloping, somewhat poorly drained, very poorly drained, and well drained, medium textured and moderately fine textured soils formed in glacial material and in residuum from dolomite and limestone bedrock
5	Patton-Shoals-Rensselaer: Deep, nearly level, poorly drained, somewhat poorly drained, and very poorly drained, moderately fine textured and medium textured soils formed in stratified lacustrine, alluvial, and glacial outwash sediments
6	Martinsville-Eel-Genesee: Deep, nearly level to moderately sloping, well drained and moderately well drained, medium textured soils formed in stratified alluvial and glacial outwash sediments

*Texture terms in the descriptive headings refer to the surface layer of the major soils in the map units

Compiled 1981

1C

FIGURE 1-4
FLOOD PLAIN MAP

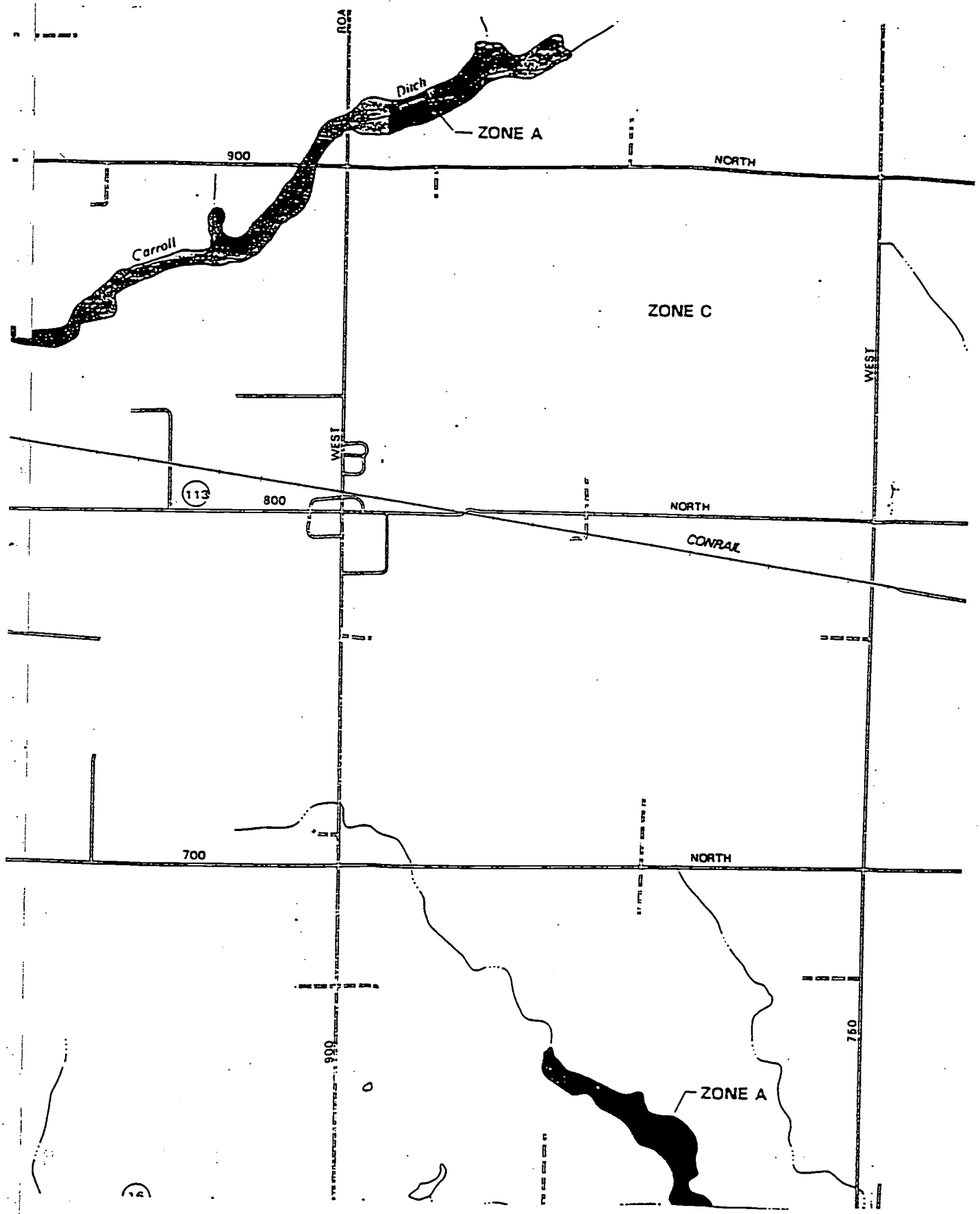
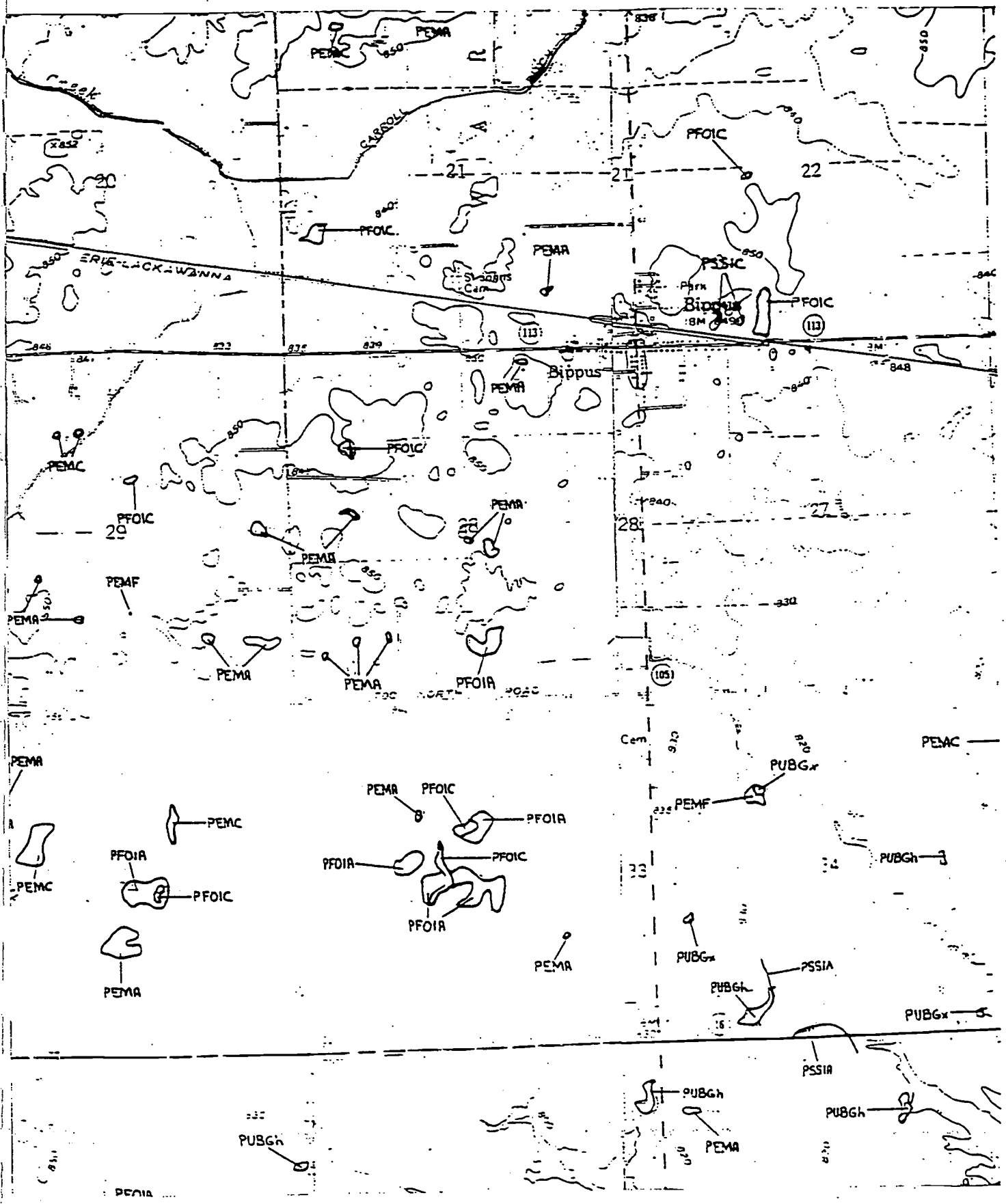


FIGURE 1-5
WETLANDS MAP



however, a slight decline occurred in the last ten years. Warren Township has generally experienced a declining population. The following table identifies the historical populations for both the Township and the County, and projects populations through the year 2010. The projections have been calculated using a linear regression.

TABLE 1-1
POPULATION PROJECTIONS

YEAR	WARREN TOWNSHIP	% CHANGE	COUNTY	% CHANGE
1960	757		33,814	
1970	806	6.5	34,970	3.4
1980	759	(5.8)	35,596	1.8
1990	717	(5.5)	35,427	(0.5)
2000	718	.1	36,318	2.5
2010	701	(2.3)	36,864	1.5

If conditions remain similar to those historically experienced, the population in Warren Township will continue to decline, while the County's will remain about the same. The population in Bippus can also be expected to remain at about the same level. Because of the many unforeseen events which might occur in the future, it is impossible to arrive at the exact population which might occupy Bippus and Huntington County in 2010; however, the current population figure of 162 is reasonable for estimating future wastewater needs of the community.

PROPOSED PROJECT

The method of investigation included a physical inspection of the community; discussions with residents at a Town Meeting; discussions and research with the Indiana Department of Environmental Management, the Indiana Department of Natural Resources, and the Huntington County Health Department; and research of available documentation.

The project proposed for Bippus consists of a new wastewater collection and treatment facility. The collection facility recommended consists of a gravity sewer system. It is estimated for purposes of this report that two lift stations will be required. The treatment system recommended is a controlled discharge lagoon. A Wasteload Allocation will need to be requested from the Indiana Department of Environmental Management to determine whether a controlled discharge lagoon will be required.

It is the recommendation of this report that the community of Bippus contact an attorney to determine the best method for establishing a legal entity which can assess rates and charges for the operation of a wastewater utility. An income survey should be completed to determine whether the community, or legal entity which is formed, meets the eligibility requirements for Indiana Department of Commerce and Rural Economic Community Development grant funding. If eligibility requirements are met, the community should pursue funding from the Indiana Department of Commerce for the purpose of wastewater planning. Simultaneously with the planning process, the Town should pursue funding from the Farmers Home Administration. A tentative schedule for funding is identified in this report.

CHAPTER 2
EXISTING FACILITIES

HISTORY

The community of Bippus is not served by any municipal utilities. The community residents receive their water from individual wells, with an average depth of 125 feet. The wells are drilled to bedrock.

CONDITION OF FACILITIES

Wastewater treatment is supposed to be accomplished by individual septic tanks discharging to absorption fields. In many instances, absorption fields are not present following septic tanks. With this situation, raw sewage flows directly from the septic tanks to local drainage systems, either piping or open drain. According to the County Sanitarian, none of the houses in the community meet the new construction codes for septic tanks and absorption fields. Lot sizes are inadequate for proper sizing of absorption fields given the soil types in the area. As described by the Soil Conservation Service, soil types are "severely limited as sites for septic tank absorption fields because of the wetness and slow permeability".

There is a system of storm drains in the community which consists of field tiles. These drains are currently being utilized as a combined sewer system to transport both storm water and sanitary wastes from the failing absorption fields. This is in violation of several state statutes. During rainfall events, there is a problem with standing water in the community. This is caused by the presence of not only rain water in the drains, but also wastewater which cannot percolate into the ground. The standing water, which is a combination of both the rain water and the wastewater presents a health hazard to the residents of the community, as discussed later. The storm drains will be better able to handle rainfall once the septic tank effluent is removed from the flow stream.

CHAPTER 3
NEED FOR PROJECT

HEALTH AND SAFETY

Standing wastewater presents a health problem. Pools of sewage provide excellent breeding sites for the Culex pipiens mosquito, a known carrier of St. Louis Encephalitis. In addition, the problems with the wastewater treatment can have a serious effect on the water wells in the area. The potential for contamination of the wells is high given the shallow depth of the wells and the poor permeability of the soils. Contamination of the wells may expose people to contact with pathogenic organisms such as those which cause Shigellosis, Typhoid Fever, Infectious Hepatitis, Amebiases, Giardiasis, and Ascariasis. The pathogenic organisms are shed not only in human feces, but are also commonly carried by wash water used by the infected person.

Samples have been taken by the County Sanitarian at two of the drainage ditches around the community. One sample was taken from the Mary Paul County Drain at the outlet south of County Road 700 N., and the other sample was taken from the L. Pinkerton County Drain at the outlet west of State Road 105. Both samples tested positive for E. Coli. The children of the community play in these ditches during the warm summer months. A copy of the laboratory reports for these samples are attached as an exhibit to this report.

SYSTEM O & M

The existing on-site wastewater treatment systems in Bippus are inadequately sized for the soil types. Proper maintenance of the systems will not improve this condition. As previously described, the lot sizes will not allow for an adequately sized absorption field; therefore changes in the operation and maintenance of the on-site systems will not solve the problems associated with the systems.

GROWTH

Without a resolution of its wastewater problems, the community cannot grow. The County Health Department will not issue permits for new septic systems; therefore, businesses cannot locate in the area. The County Sanitarian has stated that he will not issue a permit for the restaurant in Town if it is sold or other improvements are requested until the wastewater problem is resolved. Currently the restaurant is for sale.

CHAPTER 4
CONSIDERATION OF ALTERNATIVES

DESCRIPTION

Several options exist for the resolution of the wastewater treatment problems in Bippus; some of which are more viable than others. The following options will be examined more closely in this section.

1. No Action
2. Individual Treatment
3. Conventional Gravity Sewer
4. Innovative/Alternative Collection
5. Lagoon System
6. Mechanical System
7. Wetland Treatment
8. Regionalization

DESIGN CONSIDERATIONS

The customer base in Bippus is residential consisting of approximately 75 homes. There are also two churches, eighteen active or currently inactive businesses, one community center, and one park with rest room facilities. For preliminary design purposes, a population of 162 people is used, which is the 1990 census population as best estimated utilizing census tracts. Using a daily per capita sewage flow of 100 gallons per person per day results in a daily average flow of 16,200 gallons. The per capita flow of 100 gallons per person per day is the recommended flow for unsewered communities in Ten States Standards. Ten States Standards is the design standard for wastewater treatment used by the State of Indiana.

It is most likely that the type of wastewater which will be generated in Bippus will be of a domestic nature. The pollutants found in the wastewater will closely follow the concentrations found in domestic wastes throughout the country. The design waste strength is standard domestic waste as described following.

TABLE 4-1
FLOW AND WASTELOAD PROJECTIONS

Average Daily Flow	16,200 GPD
BOD5	200 PPM
Suspended Solids	250 GPM
Ammonia as NH3-N	25 PPM

In addition to the Engineering design, consideration must be given to managerial and funding options. Essentially, two state agencies have approval authority for wastewater treatment in Indiana. The Indiana Department of Health (IDOH) has authority over non-point discharge, i.e. leach fields, and entities which do not have the legal authority to form

a wastewater utility, i.e. home owners associations. The Indiana Department of Environmental Management has authority over all point dischargers, municipal systems, and entities which are formed for the purpose of providing utility service in a specified area, such as regional waste districts and conservancy districts. The IDOH will not review plans for a system over which IDEM has approval authority; therefore, all point dischargers, municipal, conservancy districts, and regional waste districts are reviewed by IDEM. In other words, if Bippus incorporates or establishes a legal entity for the purpose of providing wastewater service, the IDEM will be the approval agency. If the homeowners in Bippus get together and form a home owners association to oversee the wastewater treatment, then the IDOH will have approval authority.

Legally formed entities for utility service in an area have the power and legal authority to assess rates for the operation and maintenance of the utility including penalties and fines for nonpayment. It appears through conversations with attorney's familiar with utility law that home owner associations do not have this authority; however, a legal opinion on this matter should be obtained.

Both the Rural Economic Community Development Agency (RECD) and the Indiana Department of Commerce (IDOC) have grant funds available for the design and construction of wastewater collection and treatment systems for municipal and other legal entities. The funding agencies have developed a scoring system to rank applicants by need and distress. Grant funding may also be available from both the IDOC and the RECD for a noncommunity system with the County requesting the funds on the applicant's behalf; however, these requests are not typically funded as a result of the lower scoring of the applications.

NO ACTION

The "no action" alternative is not really a viable alternative for the community. The "no action" alternative will result in the continued degradation of the water quality of the ditches around the community. The small lots leave little area for septic tank absorption fields. The soils in the area are rated "severe" for absorption fields, and lot sizes are not large enough for construction of adequate sized fields. If no action is taken, the systems will continue to discharge nutrient rich wastewater into the storm drains, and continue to pollute the waters in Huntington County. This may pose a health problem to the many children who use the ditches for recreational purposes.

As previously discussed, proper operation and maintenance of the existing systems will not alleviate the problems. Because of the inability of the soils to absorb and treat the wastewater, the lot sizes are too small to construct a finger system of adequate size to properly treat the wastewater.

INDIVIDUAL TREATMENT

Individual treatment is accomplished by upgrading the failing septic tanks and absorption fields to bring them into compliance with the health codes. The ultimate responsibility of enforcing the improvements in the unincorporated communities falls on the Huntington

County Department of Health. It is the responsibility of the homeowner with this type of system to assure that it is operating properly and meets codes. The problem of financing these improvements will also fall on the individual homeowner. The County Health Department cannot approve conventional absorption fields in a large number of homes because of the poor soil conditions and the lot sizes. A more expensive mound system may be required on most of the lots; however, the lot sizes will not allow for this type of system. This option will not be considered further given the monetary and managerial restraints of this option.

CONVENTIONAL GRAVITY SEWER

A conventional gravity sewer system utilizes 8 inch diameter and larger pipe to transport waste from each home to a centralized treatment facility. The Community of Bippus will not require pipe sizes larger than 8 inches. Manholes are required at 400 foot intervals, at all changes in pipe direction or slope, and at the end of lines. Lift stations may be required when the depth of the sewer becomes too deep, and it is cheaper to pump the wastes to a higher elevation. It is estimated that two lift stations will be required in Bippus.

Table 4-2 is an itemized cost estimate for the gravity sewer system. Included in the cost are items which may be necessary for the construction, including the two lift stations, sewer laterals to the property lines, storm drain repair, and road repair. Also included is an emergency generator to allow operation of the lift stations during power outages. PVC sewers are used for estimating purposes. Construction costs in Tables 4-2 through 4-6 are estimated based on recently bid projects.

TABLE 4-2
GRAVITY SEWER ESTIMATED PROJECT COST

ITEM	QUANTITY	TOTAL PRICE
8" PVC Sewer	8,770 LF	$ 245,560
6" Sewer Lateral	2,300 LF	34,500
Manholes	30 EA	60,000
Wyes	91 EA	6,825
Lift Stations	2 EA	50,000
Asphalt Road Repair	4,000 LF	80,000
Stone Alley & Drive Repair	4,770 LF	23,850
Portable Generator	1 EA	16,000
Mobilization	1 LS	30,000
Videotape	1 LS	5,000
Restoration	1 LS	20,000
Storm Drain Repair	1 LS	20,000
Total Construction		$ 591,735
Contingencies (10%)		59,165
TOTAL SEWER CONSTRUCTION		$ 650,900

INNOVATIVE/ALTERNATIVE COLLECTION SYSTEMS

Innovative/Alternative options have been considered in the past as a way of reducing costs associated with collection and treatment systems. Three major categories exist; primary treatment by septic tanks with transport by small diameter sewers, grinder pumps to small diameter sewers, and vacuum systems. Costs are reduced in construction because of the smaller size of the pipe and the shallower depth of bury.

In the first system, primary treatment is accomplished in individual septic tanks which are owned by the Town, and wastewater is collected in smaller diameter sewers for transport to ultimate treatment. Smaller diameter sewers can be used because the solids are separated during primary treatment in the septic tanks, and only liquid is transported. This option is no longer being approved by the IDEM for new municipal systems with a point source of discharge. Historically, the systems that have been installed are experiencing problems with odor and flows. Flow problems are caused by extraneous water entering the system, and the inability of the smaller diameter pipes to handle additional customers. The IDOH will consider these systems for a noncommunity discharging to an absorption field. Table 4-3 is a cost estimate for a small diameter collection system in Bippus

The grinder pump option comprises one or two houses sharing a grinder pump which grinds the waste and then pumps it to a centralized location for treatment. The Town of Bippus will own the pump stations and be responsible for their maintenance including electrical costs. These systems can be maintenance intensive; however, in some cases, the cost over a twenty year period are lower if construction costs can be reduced. They have been shown to be cost effective in areas where rock is located at the surface, or in areas where the terrain is not conducive to gravity sewers. These conditions do not exist in Bippus, and this system will not be considered further.

Vacuum sewers pull the waste from individual homes to a centralized location, where it is either treated or pumped for treatment. This system is similar to the grinder pump system, except the waste is pulled rather than pumped. Vacuum sewers are maintenance intensive, and are used in the same type of conditions as grinder pump systems. As with the grinder pump system, the conditions in Bippus do not lend themselves to making this type of system cost effective, and they will not be considered further in this report.

TABLE 4-3
SMALL DIAMETER GRAVITY SEWER ESTIMATED PROJECT COST

ITEM	QUANTITY	TOTAL PRICE
4" PVC Sewer	8,770 LF	$ 157,860
4" Sewer Lateral	2,300 LF	41,400
Manholes	30 EA	60,000
Wyes	91 EA	6,825
Lift Stations	2 EA	50,000
Asphalt Road Repair	4,000 LF	80,000
Stone Alley & Drive Repair	4,770 LF	23,850
Portable Generator	1 EA	16,000
Mobilization	1 LS	30,000
Videotape	1 LS	5,000
Restoration	1 LS	20,000
Storm Drain Repair	1 LS	20,000
Total Construction		$ 510,935
Contingencies (10%)		51,065
TOTAL SEWER CONSTRUCTION		$ 562,000

LAGOON SYSTEMS

A lagoon system consists of a series of ponds which hold the sewage until a sufficient level of treatment is achieved. The IDEM establishes the limits for the wastewater being discharged, and these limits determine the size and number of ponds. Lagoons are divided into two main types, controlled discharge and flow through. A controlled discharge lagoon is needed when the IDEM determines that flow in the receiving stream is too low to accept wastewater discharge on a continual basis. A controlled discharge lagoon requires two treatment cells and a storage cell. A flow through lagoon is used when the receiving stream has adequate flow to accept wastewater on a continual basis and consists of two cells. A Wasteload Allocation must be requested from IDEM to determine the size of the storage cell in Bippus. For purposes of this report, it is assumed that 180 days of storage will be required.

TABLE 4-4
LAGOON SYSTEM ESTIMATED PROJECT COST

ITEM	QUANTITY	TOTAL PRICE
Land	5 AC	$ 15,000
Excavation	1 LS	85,000
Clay Liner	1 LS	50,000
Piping	1 LS	24,500
Control Structures	2 EA	40,000
Flume and Metering	1 LS	60,000
Electrical	1 LS	20,000
Control Building	1 LS	20,000
Fencing	2000 LF	30,000
Riprap	1 LS	20,000
Equipment	1 LS	20,000
Access Drives	1 LS	10,000
Restoration	1 LS	10,000
Total Construction		$ 404,500
Contingencies (10%)		40,500
TOTAL LAGOON CONSTRUCTION		$ 445,000

Included in the cost estimate is equipment and a control building. The equipment which may be necessary is a tractor and backhoe for mowing at the lagoon site. The control building is a small structure to house controls for the controlled discharge lagoon and the equipment. Advantages of lagoon systems include their low relative construction cost and ease of operation. The disadvantage is that the lagoon cannot be located closer than 1/4 mile to the nearest residence.

MECHANICAL SYSTEMS

Mechanical plants as the name implies use mechanical equipment to achieve treatment. Mechanical plants when maintained and operated correctly achieve a higher degree of treatment than a lagoon system; however, their operation is more technical and costly. The discharge limits on a mechanical plant are also more stringent than with a lagoon system. With a mechanical plant, the operator is required to run laboratory tests to assure the plant is operating correctly. There are several types of mechanical plants which are suited for small communities, and their costs are relatively similar. For purposes of this report, a packaged extended aeration plant will be evaluated. The packaged plant includes the biological treatment, clarification, and sludge digester in one concrete structure. The structure must be constructed in the field, and the mechanical equipment is installed in the concrete. Table 4-5 presents the estimated construction costs for a mechanical plant in Bippus.

TABLE 4-5
MECHANICAL PLANT ESTIMATED PROJECT COST

ITEM	QUANTITY	TOTAL PRICE
Land	1 AC	$ 3,000
Headworks	1 LS	20,000
Package Plant	1 LS	200,000
Sludge Drying Beds	1 LS	60,000
Chlorination/Dechlorination	1 LS	20,000
Metering	1 LS	20,000
Emergency Generator	1 EA	30,000
Electrical	1 LS	30,000
Site Piping	1 LS	60,000
Site Work	1 LS	40,000
Control Building	1 EA	$ 120,000
Total Construction		$ 603,000
Contingencies (10%)		60,300
TOTAL CONSTRUCTION COST		663,300

WETLAND SYSTEMS

Wetland systems as the name implies utilizes many of the same processes found in natural wetlands to treat municipal wastewater. In most wetland systems, naturally occurring wetlands typically are not utilized in the treatment process, and if used, only after certain water quality standards are met in the effluent prior to discharge into the natural site. The process discussed as a possibility within Bippus is a "constructed wetland". A constructed wetland is defined as a wetland specifically constructed for the purpose of wastewater treatment at a location other than existing natural wetlands. There are two basic types of constructed wetlands, the free water surface (FWS) and the vegetated submerged bed (VSB) type. The FWS type typically consists of a basin or channel of water at a relatively shallow depth, with the surface of the water exposed to the atmosphere. This type of system is typically utilized in warmer, southern climates, and is not easily acclimated to the colder, northern climates due to freezing potential. Due to this limitation, this type of wetland system will not be further evaluated. The VSB type of constructed wetland typically is a basin or channel containing a suitable depth of permeable media through which the water will flow. The media also supports the root structure of emergent vegetation, and the water elevation is designed to stay approximately 2" below the surface of the gravel media. Treatment takes place as the effluent flows through the VSB interacting with the microbes found within the wetland (bacteria, fungi, algae, and protozoa), thereby either reducing the level of contamination or changing the character of the contaminant.

A VSB system utilizes bulrushes, reeds, and cattails as the primary vegetation. Benefits of a VSB system include being relatively simple and inexpensive to construct and operate,

they usually require less land area that a lagoon system, they can provide advanced treatment of wastewater with little or no energy use requirements, and in many instances require little or no chemical treatment prior to discharge.

The Indiana Department of Health (IDOH) currently views constructed wetlands as "experimental" and are being cautious in approving their use. The Indiana Department of Environmental Management (IDEM) has stated a wetland is not an appropriate process to achieve low ammonia limits. Nevertheless, several residential communities are proceeding with systems and have received IDEM or IDOH approval.

For the purpose of this report, a VSB system discharging into a receiving stream will not be considered further due to the limited ability of a constructed wetland to reduce ammonia levels to permit limits. Utilizing a centralized VSB system prior to a soil absorption system will be further reviewed, based on the current regulations as directed by the IDOH. One other type of system, that being the use of several smaller VSB to soil absorption systems throughout the Bippus community will also be reviewed. This decentralized approach reduces piping requirements and energy costs for transporting wastewater over longer distances.

Table 4-6 is an estimate of the cost of a soil absorption field following individual septic tanks. Included in the cost is piping from the collection system. To minimize size requirements, the absorption field was sized as a shallow trench pressure dosed system. Individual 1250 gallon septic tanks at each customer location are also included.

TABLE 4-6
SOIL ABSORPTION FIELD ESTIMATED COSTS W/O WETLAND

ITEM	QUANTITY	TOTAL PRICE
12" PVC Pipe	100 LF	$ 3,600
4" Distribution Line	360 LF	3,600
2" Lateral	3500 LF	35,000
Excavation	1300 CY	3,900
Washed Gravel	390 CY	3,500
Fill Dirt	780 CY	5,500
Geofabric	1950 SY	9,750
Perimeter Drain	700 LF	7,000
3 Dosing Pumps with Tanks	1 LS	75,000
Land	2 AC	6,000
Septic Tanks	97 EA	97,000
Restoration	1 LS	10,000
Total Construction		$ 259,850
Contingencies (10%)		25,950
TOTAL ABSORPTION FIELD CONSTRUCTION		$ 285,800

Table 4-7A is an estimate of the cost of a soil absorption field with a VSB wetland between the absorption field and individual septic tanks. Included in the cost is the piping from either the collection system or the wetland system, assuming distance from both systems are similar. To minimize size requirements, the absorption field was sized as a shallow trench pressure dosed system. Individual 1250 gallon septic tanks at each customer location are also included. Table 4-7B is an estimate of the cost of a VSB wetland to be placed after the septic tanks and prior to the absorption field in Table 4-7A. Included in the wetland cost is vegetation, fill, a plastic liner to prevent percolation, and all piping.

TABLE 4-7A
SOIL ABSORPTION FIELD ESTIMATED COSTS W/WETLAND

ITEM	QUANTITY	TOTAL PRICE
12" PVC Pipe	100 LF	$ 3,600
4" Distribution Pipe	280 LF	2,800
2" Lateral Pipe	2,400 LF	24,000
Excavation	1,000 CY	5,000
Washed Gravel	340 TN	2,500
Fill	550 CY	3,900
Geofabric	1,350 SY	6,750
Perimeter Drain	600 LF	6,000
3 Dosing Pumps/Tanks	1 LS	75,000
Land	2 AC	6,000
Septic Tanks	97 EA	97,000
Restoration	1 LS	10,000
Total Construction		$ 242,550
Contingencies (10%)		24,250
TOTAL SOIL ABSORPTION FIELD CONSTRUCTION		$ 266,800

TABLE 4-7B
CONSTRUCTED WETLAND ESTIMATE COSTS

ITEM	QUANTITY	TOTAL PRICE
Land	2 AC	$ 6,000
Excavation	3,500 CY	10,500
Liner	3,500 SY	17,500
8" PVC Pipe	700 LF	19,600
6" PVC Pipe	600 LF	9,000
Washed Gravel	2,800 TN	20,000
Fill	1 LS	5,000
Dist. Tanks	6 EA	6,000
Vegetation	7,500 EA	10,000
RipRap	1 LS	5,000
Restoration	1 LS	5,000
Total Construction		$ 113,600
Contingencies (10%)		11,400
TOTAL WETLAND CONSTRUCTION		$ 125,000

REGIONALIZATION

The residents of the community may be able to regionalize with either the Town of Andrews or the City of Huntington for wastewater treatment. Service by Andrews would require a lift station and approximately 7 miles of 4 inch force main. Service by Huntington would require a lift station and approximately 10 miles of 4 inch force main. Both options would require odor control and a means of preventing the flow in the force main from becoming septic. Generally, regionalizations in excess of 5 to 6 miles are not cost effective unless other houses can be served along the way. Substantial easements are also required for this construction. It is estimated that the construction cost to collect and pump the wastewater from Bippus to Andrews will be approximately $1,622,270. The monthly user fee, without operation and maintenance, will be $95.50 based on a 40 year loan at 5.5%. This is higher than the projected user fee for the other alternatives, which will be identified later.

SUMMARY

Tables 4-2 through 4-7B have presented cost estimates for various options for wastewater collection and treatment in the Bippus area. Table 4-8 presents a summary of the collection and treatment options to provide a total project construction cost. The table also indicates which agency will have review and approval authority.

TABLE 4-8
COLLECTION AND TREATMENT SUMMARY

SEWER OPTION	TREATMENT OPTION	APPROVAL AGENCY	TOTAL PRICE
Gravity	Lagoon	IDEM	$ 1,095,900
Gravity	Mechanical Plant	IDEM	$ 1,314,200
Small Diameter	Leach field	IDOH	$ 847,800
Small Diameter	Wetland	IDOH	$ 953,800

As can be seen from Table 4-8, gravity sewers to a lagoon is the least costly system to be approved by the IDEM for a municipality or other similar legal entity, and small diameter sewers to a leach field is the least costly system for approval by the IDOH. As previously discussed, the managerial makeup of the community is critical to determining which agency has approval authority. It appears that a homeowners association does not have the legal authority to assess rates and charges for providing sewer utility service; however, as previously discussed, this is best answered by an attorney. For purposes of this report, it is assumed that a legal wastewater district will need to be formed by the community, and that IDEM will have approval authority for the system.

CHAPTER 5
RECOMMENDED ALTERNATIVE

PROJECT DESIGN

As discussed in the previous chapter, the recommended system for wastewater collection and treatment in the community of Bippus consists of a gravity sewer system and a controlled discharge lagoon. This system is recommended assuming the community will form a legal sewer utility which will be under the review authority of the IDEM.

The gravity sewer system in the Community of Bippus will consist of approximately 3,520 lineal feet of 8 inch diameter sewer, and 2,300 lineal feet of 6 inch diameter sewer lateral. The lateral is only the length required to take the main transmission main to the property line. The homeowner is responsible for the service laterals on his private property. About 30 manholes will also be required. Based on a preliminary review of the topographical map, it appears that two small lift stations will be needed in Bippus.

The controlled discharge lagoon will require approximately 5 acres of land. This land must be located at least 1/4 mile from the nearest residence, and will impact on prime farmland. A small building to house control facilities is included in the cost of the project, as is equipment for maintenance of the site.

COST ESTIMATE

Table 5-1 is an estimate of the total project cost for the recommended alternative. Included in the total project estimate is the cost for a detailed engineering analysis, design engineering, construction inspection, legal, and accounting costs. Construction Engineering includes the cost of construction contract administration, review of contractor pay requests, engineering monitoring of the project, and preparation of necessary change orders. Design Engineering includes survey work, preparation of plans and specifications, and bidding of the project. Grant Administration is included assuming the community will receive an Indiana Department of Commerce grant.

TABLE 5-1
PROJECT COST SUMMARY

ITEM	COST
Sewer Construction	$ 650,900.00
Lagoon Construction	445,000.00
Design Engineering	66,750.00
Construction Engineering	22,250.00
Construction Inspection	50,000.00
Grant Administration	25,000.00
Legal, Accounting, Etc.	40,000.00
TOTAL PROJECT COST	$1,299,900.00

Funding options which may be available to the Community include the Indiana Department of Commerce, the Rural Economic Community Development Administration (RECD, formerly the Farmers Home Administration), the State Revolving Loan Fund, and local financing. Local financing can include borrowing the funds from a local bank or from the Indiana Bond Bank.

The Indiana Department of Commerce offers 90% grant money up to $500,000.00 to communities which meet the income level requirements. An income survey is required to determine if the community can meet the income requirements. IDOC grants are made twice per year and are awarded competitively. An additional cost associated with the award of an IDOC grant is the need for a grant administrator, and $25,000.00 has been included in the cost of the project.

The RECD offers grants which traditionally average approximately 50% of eligible project cost. The Community may qualify for an RECD grant based on income levels; however, the process for obtaining this money is very time consuming and can take several years. In addition, it is usually necessary for the Community to be under enforcement action from IDEM to qualify for the grants. Loans for the remainder of the project budget are also available from the RECD at below prime for a period of up to 40 years.

Funding the project through the State Revolving Loan Fund (SRF) or locally through a bank can take place either individually, or in combination with a grant from the IDOC. The SRF offers lower interest rates within the loan, but also due to requirements of the development of a facility plan, the process is time consuming. Prior to receiving the loan, the Community must be placed on a project priority list. Throughout the process, review by IDEM is required prior to advancing to the next phase. The SRF currently offers rates ranging from 2.9% to 3.9% with a term of 20-30 years.

Funding through a local bank provides the method of least resistance, least

paperwork, and thereby the least time delay for construction. It requires a local bank to be willing to purchase the bond necessary to pay for the project. If a local bank cannot purchase the bond, the bonds can then be sold through the Indiana Bond Bank. Typically a project of this magnitude cannot proceed without some form of grant financing, such as the IDOC. If grants are not involved in the project construction and funding would be required totally through local Banks or the Indiana Bond Bank, the project will typically be found not feasible due to high monthly costs to system users.

ANNUAL OPERATING BUDGET

Tables 5-2 through 5-5 provide the estimated monthly user charges for the proposed project based on varying levels of grant funding. Operations and Maintenance costs include the cost for electrical power at the lift stations and at the plant, and the cost of a part time operator to run the necessary tests for discharge permit compliance. Also included is funding for a part-time billing clerk to mail the bills on a monthly basis.

Table 5-2 estimates the user charge with no grant funding from any source, and compares the user fee for a loan from RECD with a loan from the SRF. The RECD loan is calculated using a 5.5% interest rate for 40 years, and the SRF loan is calculated using a 3.5% rate for 30 years. Grant administration costs have been removed from the total project cost. This estimate does not include the cost for a Facility Plan, based on the current program of the SRF to fund the Facility Plan if the Community utilizes the SRF to construct the collection and treatment system.

TABLE 5-2
MONTHLY USER CHARGE WITH NO GRANTS

ITEM	RECD	SRF
Total Project Cost	$ 1,299,900.00	$ 1,299,900.00
Monthly Loan Payment	$ 6,705.00	$ 5,837.00
Coverage at 10%	$ 671.00	$ 584.00
Total Monthly Payment	$ 7,376.00	$ 6,421.00
Monthly O, M, & R	$ 1,667.00	$ 1,667.00
Total Monthly Costs	$ 9,043.00	$ 8,088.00
Monthly User Fee	$ 93.23	$ 83.38

The monthly user fee is calculated using 97 customers. Table 5-2 indicates that monthly user fees will be less by utilizing the SRF program if grants are not available. As stated previously, the Community may be eligible for grant funding from RECD for

approximately 50% of the eligible project cost, and for a $500,000.00 grant from the IDOC if it meets the income level criteria. Table 5-3 identifies the monthly estimated user fee with a loan and grant from the RECD. The Table assumes a 50% grant and a loan payable at 5.5% interest for 38 years. Table 5-4 identifies the monthly user fee if a grant is obtained from the IDOC, and a loan and grant are obtained from the RECD. This table also assumes a loan at 5.5% interest for a period of 38 years. Table 5-5 identifies the monthly user fee if a IDOC grant is obtained and a loan from the SRF is utilized. The SRF interest rate used in this Table is 3.5% and a period of 30 years.

TABLE 5-3
RECD LOAN AND GRANT

ITEM	RECD
Project Cost	$ 1,299,900.00
Less 50% Grant	$ 649,950.00
Loan Amount	$ 649,950.00
Monthly Loan Payment	$ 3,428.50
Coverage at 10%	$ 342.85
Total Monthly Loan Payments	$ 3,771.35
Monthly O, M, & R	$ 1,667.00
Total Monthly Costs	$ 5,438.35
Monthly User Fee	$ 56.06

TABLE 5-4
RECD LOAN AND GRANT/IDOC GRANT

Project Cost	$ 1,299,900.00
Less IDOC Grant	$ 500,000.00
Less RECD Grant	$ 399,950.00
Loan Amount	$ 399,950.00
Monthly Loan Payment	$ 2,109.75
Coverage at 10%	$ 210,97
Total Loan Payments	$ 2,320.72
Monthly O, M, & R	$ 1,667.00
Total Monthly Costs	$ 3,987.72
Monthly User Fee	$ 41.11

TABLE 5-5
IDOC GRANT AND SRF LOAN

Project Cost	$ 1,299,900.00
Less IDOC Grant	$ 500,000.00
Loan Amount	$ 799,900.00
SRF Monthly Loan Payment	$ 3,593.92
Coverage at 10%	$ 359.39
Total Monthly Loan Payments	$ 3,953.31
Monthly O, M, & R	$ 1,667.00
Total Monthly Costs	$ 5,620.31
Monthly User Fee	**$ 57.94**

CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

It is the conclusion of this report that the Community of Bippus is in need of a centralized wastewater collection and treatment facility. Soil conditions in the area are such that individual treatment by septic tanks and absorption fields are not a viable alternative.

To move forward to the financing of a community system, it appears that a legal entity must be formed which has the authority to assess rates and charges for the operation of a wastewater utility. An attorney must address the issue of whether a home owners association has this authority. An attorney is also best suited to determine which type of legal entity is best suited for the community. Options include incorporation of the region as a Town, formation of a regional sewer district, formation of a conservancy district, or the creation of a not for profit sewer utility.

FUNDING

Once a legal entity is formed, the wastewater system construction can be financed using local money, grants, or loans. Grant money may be available from the Indiana Department of Commerce (IDOC) through the Community Focus Fund if the community meets the income guidelines. A ten percent local match is required for the Community Focus Fund grants. Loan money and additional grant money may be available from the Rural Economic Community Development Administration (RECD).

The community through the Huntington County Commissioners may wish to consider pursuing an Indiana Department of Commerce Planning Grant to complete a Comprehensive Plan of the proposed wastewater facilities. This plan could include preliminary engineering work necessary to design the project, including a more detailed analysis of the viable systems, survey, and preliminary design. Planning Grants are available to qualifying communities up to a maximum of $50,000.00. A 10% local match is required.

If the Community does qualify for IDOC grants, a funding scheme can be established using IDOC grant money and RECD loans and grants. While the Community is completing the planning process, the application for RECD funding should be submitted. Table 6-1 provides a time line for financing if the Community is eligible for IDOC and RECD funding.

TABLE 6-1
PROJECT SCHEDULE

Complete Income Survey	May 1996
Submit Planning Grant Application	July 1996
Receive Planning Grant	September 1996
Complete Planning	January 1997
Submit RECD Application	November 1996
Receive RECD Funding	December 1997
Receive IDOC Funding	April 1997
Start Construction	January 1998
Complete Construction	September 1998

As can be seen by Table 6-1, the process is not quick. This presents an optimistic, yet realistic timetable for funding. The Community must understand that the time for review at RECD is out of the hands of the Engineer, as is the availability of funds. This timetable has assumed a somewhat expedited review at RECD. It has also assumed that the Community is eligible for IDOC funding. If IDOC funding is not an option, the timetable can continue to be used for funding the entire project.

Without grant funding, the sewer rates in the community will average about $83.00 to $93.00 per month. It is imperative that grant money be found to complete the project. With RECD and IDOC grant funding, the rates will be approximately $41.00 per month.

RECOMMENDATIONS

It is the recommendation of this report that the community of Bippus complete an income survey to determine if it is eligible for IDOC grant money. If the Community does meet the income level requirements, it is recommended the Community apply for a Planning Grant to complete a comprehensive study of its' wastewater needs. Prior to making an application to IDOC, it is recommended the Community form a legal entity, which may be a sewer district, a conservancy district, incorporation, or formation of a not for profit sewage utility. The community should work with an attorney to determine the best and most feasible alternative for this portion of the project.

EXHIBIT 1
SAMPLING RESULTS

HEALTH OFFICIAL/POOLS & SPAS/BEACHES & LAKES REPORT FORM

#004333

Shipping No. 013046

Date Rep. SEP 28 1994

INDIANA STATE DEPARTMENT OF HEALTH
Environmental Laboratory Division
1330 West Michigan Street
P.O. Box 1964
Indianapolis, Indiana 46206-1964

Sample Number _____

Date Received SEP 14 1994

SAMPLES SUBMITTED WITHOUT COMPLETED FORM WILL NOT BE ANALYZED. USE BLACK INK.
Indiana State Department of Health is to mail report to

(Name)

HUNTINGTON COUNTY DEPT. OF HEALTH
(Street) Court House - Room 205
HUNTINGTON, IN 46750
(City or Town) (Zip)

SAMPLE SUBMITTED BY: Mike Mettler

HEALTH OFFICIAL Mike Mettler COUNTY

IDENTIFICATION NUMBER: 3 5 H 0 0 0 1

BOTTLE NUMBER: -

SAMPLE SOURCE (CHECK ONE) AND DESCRIPTION

- ☐ Drinking Water
- ☐ Swimming Pool
- ☐ Spa/Hot Tub
- ☐ Bathing Beach
- ☒ Surface Water-Ditch, etc.
- ☐ Ice
- ☐ Meat/Poultry Plant
- ☐ Bottled Water
- ☐ Dairy
- ☐ OTHER _____

REPORTED
SEP 27 1994
Indiana State Department of Health
Environmental Laboratory Division

NAME/ORGANIZATION Mary Paul Co. Drain

ADDRESS Sec. 27, T29N R8E

LOCATION Outlet S. of 700N

PHONE _____

DATE COLLECTED 9/13/94 TIME COLLECTED 1:55 AM

ADDITIONAL REPORTS ARE TO BE MAILED TO:

(Name)

(Street)

(City or Town) IN (Zip)

ANALYSIS DATA--TO BE COMPLETED BY LAB

TEST: TOTAL COLIFORM

METHOD:*

☐ MF ☐ MTF ☐ LST P/A ☐ MMO-MUG P/A

RESULT:

☐ PRESENT ☐ ABSENT

ANALYST: _____

TEST: ☐ FECAL COLIFORM ☑ E. COLI

METHOD:*

☑ MF ☐ MTF ☐ EC P/A ☐ MMO-MUG P/A

RESULT: 270

☐ PRESENT ☐ ABSENT

ANALYST: _____

*If MTF is checked the result is number of positive tubes.
If MF is checked the result is organisms per 100 ml.
If P/A is checked the result is presence (P) or absence (A).

Incidental Pseudomonas Detected ☐

HETEROTROPHIC PLATE COUNT _____/1.0 ML _____/0.1 ML

REPORT OF SAMPLES

☐ SATISFACTORY: At examination time, this water was bacteriologically safe based on USEPA standards.

☐ UNSATISFACTORY: At examination time, this water was bacteriologically unsafe.

☐ PLEASE SUBMIT ANOTHER SAMPLE. TEST NOT VALID BECAUSE:

- ☐ Too long in transit (more than 48 hours).
- ☐ Invalid/no collection date.
- ☐ Sample type not designated.
- ☐ Other _____

TIME OF ANALYSIS 1:30

CO
9-2

HEALTH OFFICIAL/POOLS & SPAS/BEACHES & LAKES REPORT FORM

Shipping No. 013046

Date Rep. _____

INDIANA STATE DEPARTMENT OF HEALTH
Environmental Laboratory Division
1330 West Michigan Street
P.O. Box 1964
Indianapolis, Indiana 46206-1964

Sample Number H003363

Date Received JUL 14 1994

SAMPLES SUBMITTED WITHOUT COMPLETED FORM WILL NOT BE ANALYZED. USE BLACK INK.
Indiana State Department of Health is to mail report to:

(Name) HUNTINGTON COUNTY DEPT. OF HEALTH
(Street) Court House Room 205
(City or Town) HUNTINGTON, IN (Zip) 46750

SAMPLE SUBMITTED BY: Mike Mettler

☒ HEALTH OFFICIAL Huntington COUNTY

IDENTIFICATION NUMBER _____ BOTTLE NUMBER _____

SAMPLE SOURCE (CHECK ONE) AND DESCRIPTION:

☐ Drinking Water ☐ Swimming Pool ☐ Spa/Hot Tub
☐ Bathing Beach ☒ Surface Water ☐ Ice
Ditch, etc.
☐ Meat/Poultry Plant ☐ Bottled Water ☐ Dairy

☐ OTHER _____

NAME/ORGANIZATION L. Pinkerton Co. Drain

ADDRESS Sec. 29, T.29N, R.8E

LOCATION Outlet W. of SR 105

PHONE _____

DATE COLLECTED 7/13/94 TIME COLLECTED 11:05 AM

ADDITIONAL REPORTS ARE TO BE MAILED TO:

(Name) _____

(Street) _____

(City or Town) _____ IN _____ (Zip)

ANALYSIS DATA—TO BE COMPLETED BY LAB

TEST: TOTAL COLIFORM

METHOD: ☐ MF ☐ MTF ☐ LST P/A ☒ MMO-MUG P/A

RESULT: ☐ PRESENT ☐ ABSENT

ANALYST: _____

TEST: ☐ FECAL COLIFORM ☒ E. COLI

METHOD: ☒ MF ☐ MTF ☐ EC P/A ☒ MMO-MUG P/A

RESULT: ☒ PRESENT ☐ ABSENT 1800

ANALYST: [redacted]

If MF is checked, the result is number of positive tubes.
If MTF is checked, the result is organisms per 100 ml.
If P/A is checked, the result is presence (P) or absence (A).

☐ Pseudomonas Detected ☐

HETEROTROPHIC PLATE COUNT _____/1.0 ML _____/0.1 ML

REPORTED
JUL 19 1994
Indiana State Department of Health
Bureau of Laboratories
Environmental Laboratory Division

REPORT OF SAMPLES

☐ SATISFACTORY: At examination time, this water was bacteriologically safe based on USEPA standards.

☐ UNSATISFACTORY: At examination time, this water was bacteriologically unsafe.

☐ PLEASE SUBMIT ANOTHER SAMPLE. TEST NOT VALID BECAUSE:

☐ Too long in transit (more than 48 hours).

☐ Invalid/no collection date.

☐ Sample type not designated.

☐ Other

7-18

TIME OF ANALYSIS _____

EXHIBIT 2
PUBLIC PARTICIPATION

H-P 2/21/95

Public hearing set in Bippus

A public hearing will be held on Wednesday, Feb. 22 at 7 p.m. at the Lions Club in Bippus to ~~discuss whether~~ town residents ~~are in favor~~ of having a feasibility study done of their community to target a way to control sewage problems.

Currently, each home in Bippus is hooked up to its own ~~sewage~~ tank that is connected to a field tile.

According to county health officials where the sewage problem lies is that this kind of setup allows ~~all~~ sewage generated from each house to drain into nearby ditches and then into area streams. This type of arrangement is defined as ~~free draining~~ discharging sewage and in Huntington County that is considered illegal.

The County Health Department has hired project engineer Tim Ehlerding of Gove Associates, an engineering firm from Indianapolis, to study the sewage problem in Bippus.

~~If the study is approved~~, two things would be accomplished. First, it would give several choices as to how to fix the current problem.

These choices could range from pumping the sewage to other treatment centers in the area to building a sewage lagoon similar to that found in Roanoke.

Second, the study would target several ways to fund the project. These could include low-interest loans, federal grants or both.

Elherding has stated that the study will cost $4,000, with the county responsible for paying $2,000. Last month, the county commissioners agreed to allocate $2,000 for the study. The county's share will come from the health department budget. The remaining $2,000 would be paid by a state grant fund, known as the CAP program.

If town residents approve the study, the county commissioners will appoint a regional sewer district board to manage the project.

Bippus Community Meeting Feb. 22, 1995 (1)

Name	Address
JACK G. BELL	9143 W 800 N BX 68, Bippus
ALICE BELL	" " " "
Cliff Webb	9125 W - 800 N - Hunt 46
Homer Muir	Box 96 Bippus 467
Dick Beckstedt	Box 54 Bippus 46
Judy Beckstedt	" " "
Danny Wheeler	8071 N - 900 W Hunt. 46750
Richard Young	8135 N 894 W Hunt 46750
[illegible] Randolph	9020 N 90
Cathy Snyder	9030 W 800 N Hunt. 46750
Linda Miller	8920 W - 800 N Hunt. 46750
Chad Cripe	8855 W - 800 N Hunt 46750
CRAIG RITTENHOUSE	9122 W 800 N HUNT.
Carl Bock	8826 W 800 N. P.O. Box 37 B
Harold Pudlow	9000 W 821 N PO Box 94 Bippus
Jean Butts	8160 N - 894 W Box 23, Bippus
Chris Udell	8295 N - 921 W Huntington Ind 46
STEVE RITTENHOUSE	9122 W 800 N HUNT. IN
Bill Beckstedt	9036 W 800 N Hunt IN
Scott Knecht	9113 W - 800 N HTGN. IN
Tim Krumanaker	7940 N - 850 W HTGN IN
Betty Kendall	Box 19 Bippus
Katherine E. Whitacre	Box Bippus
Brad Zuber	8829 W 800 N
Angie Landrum	8829 W - 800 N
[illegible]	7938 N - 900 W
Sara Landrum	" "
Kurt Krumanaker	7924 N - 886 W

(Over)

Bippus Community Meeting Feb 22, 1995 (2)

Name	Address
[illegible]	[illegible]
Edward Snyder	Box 144, Bippus, Ind.

BIPPUS TOWN MEETING

LIONS CLUB
fEBRUARY 22, 1995
7:00 P.M.

Mike Mettler - Background of Sewage Disposal in Bippus
Explanation of State Code for Septics
Explanation of Feasability Study

Tim Ehlerding - Grove Assoc.

Notes distributed to public

Lagoon
Constructed Wetland
Mechanical System
Hook-up to Huntington
Nothing
Improving Current Method of Disposal
Maintaining Current Method of Disposal

Feasability Study 6 months
Then Public Mtg.

Set up a legal entity
Define Scope of Project

Q - How can you do a legitimate feasability study when there was a proposal for cleaning the current tiles?

A - Feasability study will look at LEGAL options.

Q - Town is not incorporated?

A - Option to set up a sewer district.
It will not incorporate town.

Q - If you got a leech bed you're ok.
If not you're wrong?

A - NO. Individual site evaluation by county.

Q - New systems in last 10 years.

A - Decision has not been made.

Q - $35 monthly fee - how long?

A - Pay off debt, then fee may drop
Design for 20 years

Can not tell you regulations won't change in 20-30yrs.

Q - Sand filter system - that discharges. I was told it was obsolete.

A - Sand filters that were installed after "1948" in Indiana that discharged were illegal if installed after 1948 - they were installed all over very common technology.

Q - What about "modern" systems.

A - Because of financial status of project most are included in project.

Q - Why can't existing tanks be policied? Only clear water out of town.

A - Effluent is still health hazard. Has to discharge to an acceptable absorption field.

Q - Water runs 4 way out of town

A - Multiple treatment locations around town

Q - Does county have any ground around here? Then you have to buy land from a farmer.

A - NO storm water system

Only sewage disposal

If there are areas where water stands over manholes - then manholes are sealed.

Town has a lot of standing water

Q - What about odor of lagoon?

A - Locate to minimiiize odor

Q - Constructed Wetlands

Q - Who controls monthly rates?

A - Sewer Board

There are people who don't pay street light bill

Q - Will there be another public meeting after feasability is completed.

A - Yes

Q - When did state suddenly decide these systems were illegal?

A - 1948
As county finds out about failures the homeowners are ordered to update.

Q - If you purchase land to do this what do you pay.

A - No answer on.
Benefit of wetlands is: Smaller area is needed

Q - How long before gravel plugs.

A - Maintenance can be done

Q - Would existing storm water system stay?

A - Yes. Replace any damage done.

Q - Wetland - How long before pea gravel disintegrates?

A - Don't know how long.

Is it considered hazardous sludge

Q - Tank pumping - individual cost?

A - No. It would be included in O & M

Q - Isn't Huntington Sewage Plant at capacity?

A - Yes - but planning expansion

Q - Whaat is Bippus?

A - All in the study

Q - If within 300' you have to hook up.

A - State laws say you may have to - Not always enforced.

<u>Both Sewer & Water</u>

Huntington	-	$36
Marble	-	$66
Roanoke	-	$50

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
ENVIRONMENTAL SCIENTISTS
CONSTRUCTION MANAGERS

70 EAST 91ST STREET
INDIANAPOLIS, INDIANA 46240-1550
(317) 843-0022
FAX (317) 843-0405

TOWN OF BIPPUS, COUNTY OF HUNTINGTON
WASTEWATER TREATMENT FEASIBILITY STUDY
RESIDENTS MEETING - FEBRUARY 22, 1995

I. WHAT IS A FEASIBILITY STUDY?

A feasibility study looks at all of the options available to a community where a sanitary sewer system is needed. Options may include, but are not limited to, keeping with the existing system, looking at a community-wide collection and treatment system, or even running a sewer line to a nearby community who currently has a treatment facility and has the ability to take additional sewage. Estimated costs, including operation and maintenance, also are included.

Funding opportunities, including Federal and State grants and low interest loans available to the community, are identified, and by utilizing these grants and loans, estimate a monthly cost for the resident.

II. AFTER THE FEASIBILITY STUDY

After the feasibility study is completed and accepted, application for grants and loans from Federal and State agencies begins. Paying the local share, traditionally by establishing a sewer district within the service area of the system, can take place concurrently with the grant application time period in order to speed the process up.

III. CONSTRUCTION

After awarding of grants and loans, and after a system is set up to fund the local share of the project, and after numerous public meetings/hearings take place, then design of the system begins. This process includes numerous public meetings, meetings with the sewer district, County Commissioners, County Health Board, and other groups and agencies.

After designs are completed and accepted, award of a contract takes place and construction begins.

The total process can take anywhere from three to five years to complete...quite a long time.

H-P 2/28/95

Feasibility study begins in Bippus

By PAM KNEPPER
County News Editor

Bippus residents were informed during a public hearing last Wednesday to have a feasibility study done in their community to determine what kind of waste water treatment system would be the most economical and effective to help control the community's current problem with illegal discharging of sewage.

Project engineer Tim Ehlerding of Gove Associates, an engineering firm in Indianapolis, will conduct the study.

The study will cost $4,000 with the county responsible for paying $2,000. Last month county commissioners agreed to allocate $2,000 for the study. The county's share will come from the health department budget. The remaining $2,000 will be paid by a federally-funded grant program, known as CAP.

The study will accomplish two things. First, it will provide the community with a choice of several sewage treatment systems to help control their sewage problem. Second, a variety of ways to fund the chosen sewage treatment system will be provided.

County health department officials said sewage treatment systems that the study is looking at for the Bippus community include pumping the sewage to other treatment centers in the area, building a sewage lagoon similar to that found in Roanoke, or building a constructed wetlands that uses aquatic plants to treat the sewage.

Ways to fund the sewage treatment system could include low-interest loans, federal grants, or both.

The one area of concern expressed by Bippus residents at the meeting was what the overall cost would be for each resident to build and maintain a sewage treatment system in their community.

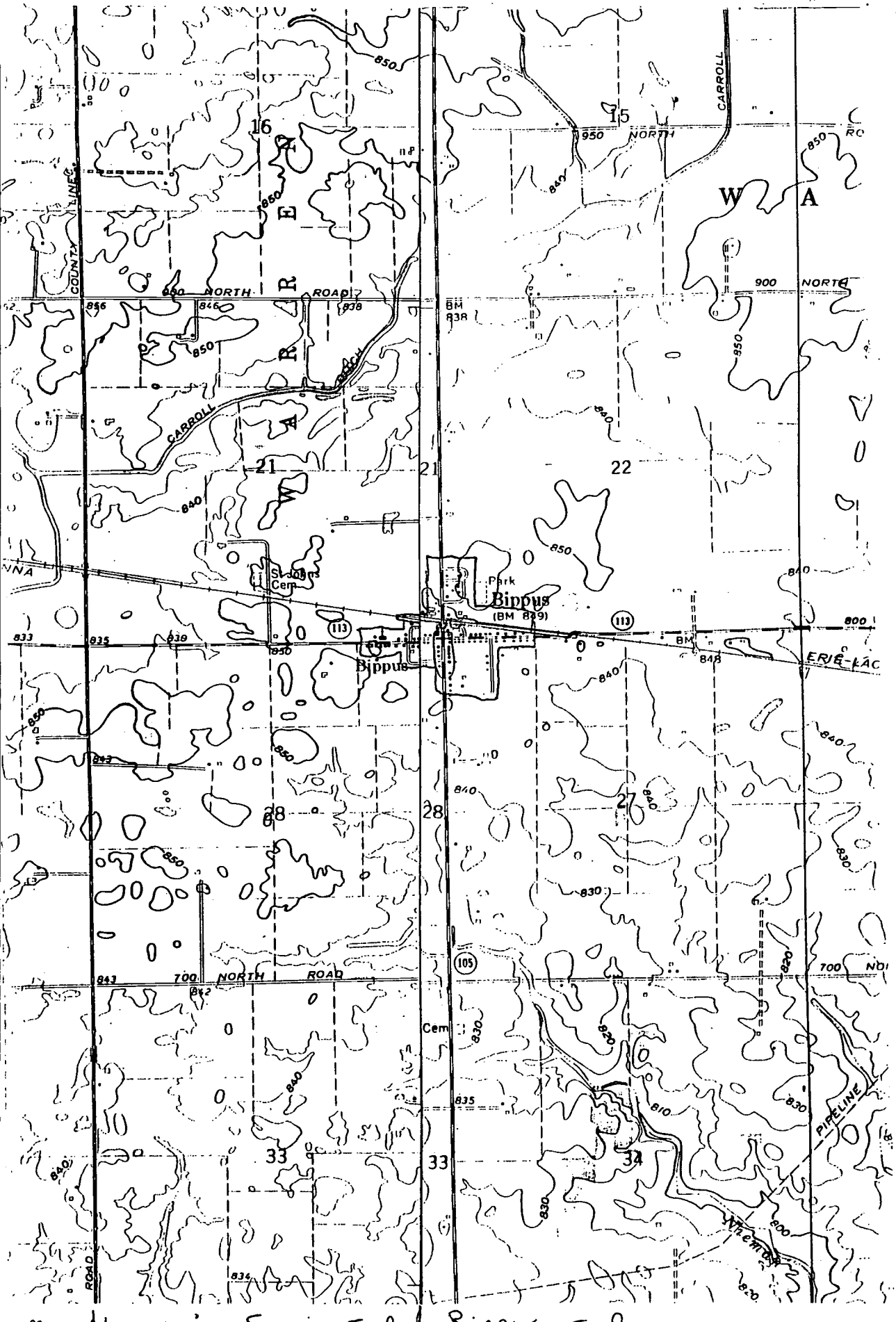
Ehlerding said that a $35 monthly fee for each resident is what the feasibility study will base its final recommendations on when determining types of sewage systems and funding.

Officials at the county health department said that if the study proves the cost will be more than $35 a month, then the current plan will be disregarded and another will be developed.

The feasibility study is scheduled to begin March 15 and should be completed sometime in May. A public hearing will then be organized to provide Bippus residents with a summary of options for the sewage system project.

If residents decide to approve one of the options, then the county commissioners will assign three Bippus residents to serve on a Regional Sewer Board that will be responsible for managing and maintaining the new sewage system.

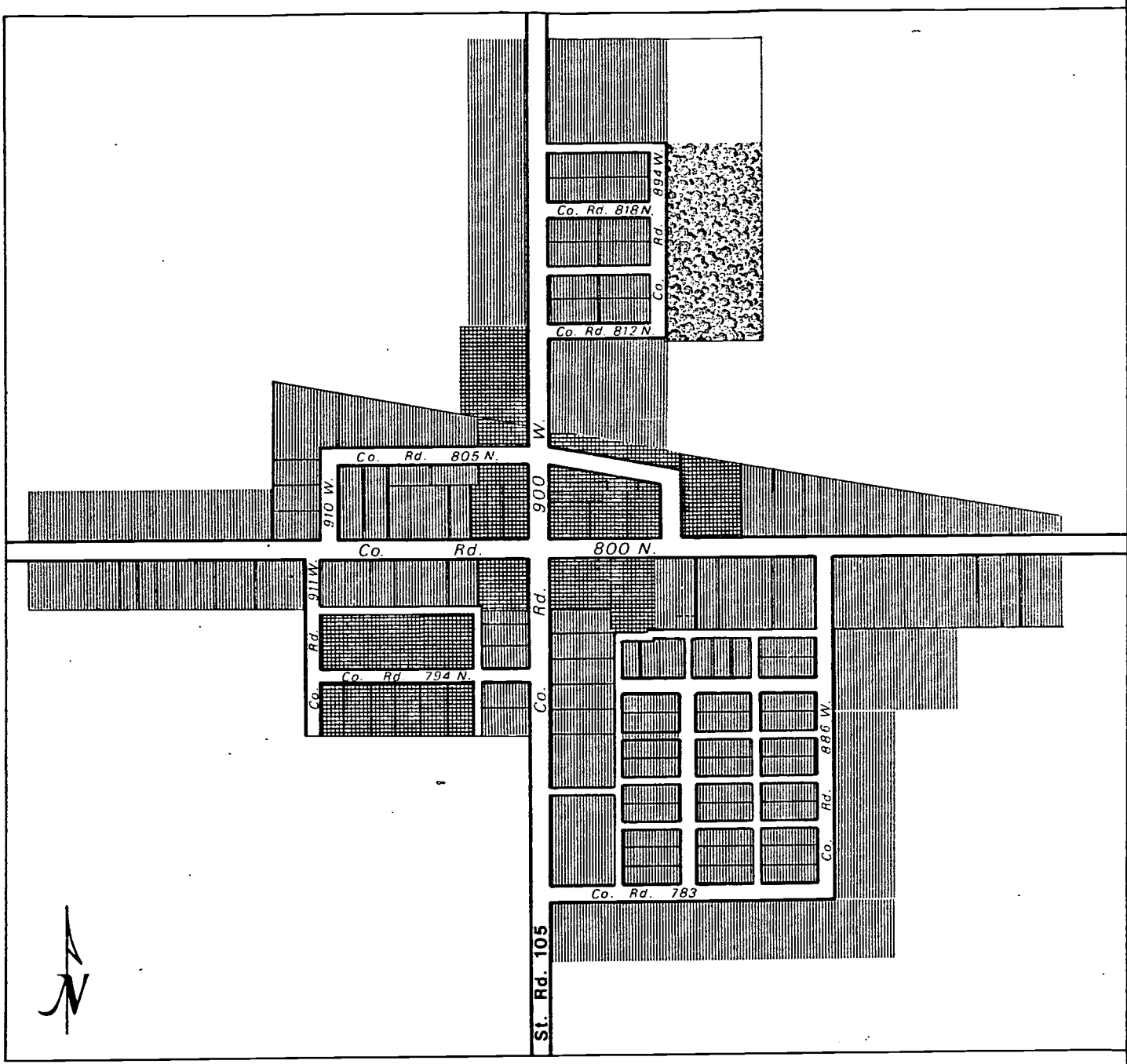
The current sewage problem in Bippus is a result of a system that allows all sewage generated from each house to drain into nearby ditches and then into area streams. In Huntington County this is considered illegal discharging of sewage.



Map Names : Servia, Ind. Bippus, Ind.

USGS Quadrangle Maps

BIPPUS



BIPPUS
Unincorporated Town
WARREN TOWNSHIP
HUNTINGTON COUNTY
INDIANA

Scale: 1 in. = 400 ft.

ZONING MAP

LEGEND:

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GB	
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March, 19