Independent Auditor's Report In Accordance With Government Auditing Standards

Report on Compliance and Internal Controls

HOLTMAN, WAGNER & COMPANY, L.L.P.

Certified Public Accountants

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New Braunfels, Texas 78130
830-625-1182
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REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Directors
Guadalupe-Blanco River Authority

We have audited the financial statements of Guadalupe-Blanco River Authority as of and for the year ended August 31, 2005 and have issued our report thereon dated October 7, 2005. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

In planning and performing our audit, we considered Guadalupe-Blanco River Authority's internal control over financial reporting in order to determine our auditing procedures for the purpose of expressing our opinions on the financial statements and not to provide an opinion on the internal control over financial reporting. Our consideration of the internal control over financial reporting would not necessarily disclose all matters in the internal control that might be material weaknesses. A material weakness is a reportable condition in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements caused by error or fraud in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. We noted no matters involving the internal control over financial reporting and its operation that we consider to be material weaknesses. However, we noted certain matters that we reported to management of GBRA in a separate letter dated October 7, 2005.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Guadalupe-Blanco River Authority's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

This report is intended solely for the information and use of the audit committee, management, and the board of directors and is not intended to be and should not be used by anyone other than these specified parties.

Holtman Wagner & Company LLP

Holtman, Wagner & Company, L.L.P.
New Braunfels, Texas
October 7, 2005

Principal Offices and Business Locations

General Office
General Division
Canyon Hydroelectric Division
Guadalupe Valley Hydroelectric Division
Regional Laboratory
Rural Utilities Division
Water Resources Division
933 East Court Street
Seguin, TX 78155
TEL: (830) 379-5822 or (800) 413-5822
FAX: (830) 379-9718
Website and email: http://www.gbra.org

Buda Wastewater Reclamation Plant
P. O. Box 216
575 County Road 236
Buda, TX 78610
TEL: (512) 312-0526
FAX: (512)295-1207
email: dball@gbra.org

Coleto Creek Division
P. O. Box 68
Fannin, TX 77960 OR
365 Coleto Park Road
Victoria, TX 77905
TEL: (361) 575-6366
FAX: (361) 575-2267
email: gbraccp@gbra.org

Lake Wood Recreation Area
Route 2, Box 158-A, OR
167 FM 2091
Gonzales, TX 78629-9633
TEL and FAX: (830) 672-2779
email: lakewood@gvtc.com

Lockhart Wastewater Reclamation Division
4435 FM 20 East
Lockhart, TX 78644
TEL: (512) 398-6391
FAX: (512) 398-2036
email: gbra-lockhart@lockhart.net

Lockhart Water Treatment Division
547 Old McMahan Road
Lockhart, TX 78644
TEL: (512) 398-3528
email: gbra-lockhart-wtp @lockhart.net

Luling Water Treatment Plant
350 Memorial Drive
Luling, TX 78648
TEL and FAX: (830) 875-2132
email: jdowney@gbra.org

Port Lavaca Water Treatment Plant
Calhoun County Rural Water Supply Division
Calhoun Canal System
P. O. Box 146 OR
1064 State Highway 316
Port Lavaca, TX 77979
TEL: (361) 552-9751
FAX: (361) 552-6529
email: gbrapl@gbra.org

San Marcos Water Treatment Plant
91 Old Bastrop Road
San Marcos, TX 78666
TEL: (512) 353-3888
FAX: (512) 353-3127
email: dball@gbra.org

Victoria Regional Wastewater Reclamation Division
P. O. Box 2085
Victoria, TX 77902 OR
923 U. S. Highway 59 South
Victoria, TX 77905
TEL: (361) 578-2878
FAX: (361) 578-9039
email: gbravic@gbra.org

Attachment No. 8
Wimberley's Rate Ordinances

Application by the Village of Wimberley to Amend Sewer CCN No. 20936

2

ORDINANCE NO. 2004-006

AN ORDINANCE OF THE VILLAGE OF WIMBERLEY, TEXAS CONCERNING THE VILLAGE WASTEWATER UTILITY SYSTEM AND PROVIDING FOR THE FOLLOWING: FINDINGS OF FACT; DEFINITIONS; ESTABLISHING AN INTERIM RATE SCHEDULE; RELATION TO OTHER ORDINANCES; EFFECTIVE DATE; ENFORCEMENT INCLUDING CRIMINAL AND CIVIL PENALTIES WITH MAXIMUM CRIMINAL FINE OF $2,000.00 AND MAXIMUM CIVIL FINE OF $1,000.00 FOR VIOLATION; NO VESTED INTEREST; SEVERABILITY; PROPER NOTICE AND MEETING.

WHEREAS, the City Council of the Village of Wimberley ("City Council") seeks to promote the health, safety and general welfare of the citizens of the Village; and

WHEREAS, the City Council seeks to ensure that sewer utility service is adequate and efficient for the citizens of the Village of Wimberley ("Village"); and

WHEREAS, pursuant to Texas Local Government Code Section 51.001, the City Council is authorized to adopt an ordinance that is for the good government, peace or order of the Village and is necessary or proper for carrying out a power granted by law to the Village; and

WHEREAS, pursuant to Texas Local Government Code Section 51.012, the City Council is authorized to adopt an ordinance, not inconsistent with state law, that the Council considers proper for the government, interest, welfare or good order of the Village; and

WHEREAS, pursuant to Texas Local Government Code Section 402.001, the Village is authorized to purchase, construct and operate utility systems, including sewer systems; and

WHEREAS, the Village recently acquired the Bluehole Wastewater System;

WHEREAS, pursuant to Chapter 13, Texas Water Code and the Village Sewer Certificate of Convenience and Necessity Number 20936, the Village has the authority and responsibility to provide wastewater services to its customers; and

WHEREAS, the City Council finds that it is in the public interest to charge customers the same rate as charged by the predecessor owner until the costs of operations and upgrades of the wastewater system is determined;

NOW THEREFORE, be it ordained by the City Council of the Village of Wimberley, County of Hays, State of Texas:

SECTION 1. FINDINGS OF FACT

All of the above premises are hereby found to be true and correct legislative and factual findings of the Village of Wimberley and are hereby approved and incorporated into the body of this Ordinance as if copied in their entirety.

SECTION 2. DEFINITIONS

(1) "Biochemical Oxygen Demand" or "BOD" means a measurement of the strength of the wastewater, the amount of oxygen utilized in the biochemical oxidation of the organic matter in the wastewater, determined by standard laboratory procedure in 5-days at 20-degrees Celsius, expressed in milligrams per liter (mg/l).

(2) "Commission" means the Texas Commission on Environmental Quality.

(3) "Council" means the City Council of the Village of Wimberley.

(4) "Customer" means the person receiving the sewage collection, treatment and disposal service from the Utility.

(5) "Meter" means any devise used to measure water or sewage flow.

(6) "Sanitary sewage" means the liquid and water carried wastes discharged from the sanitary conveniences of dwellings and other buildings.

(7) "Sewage" means sanitary sewage and industrial waste, together with such infiltration water as may be present.

(8) "Utility" means the Village of Wimberley.

(9) "Village" or "Wimberley" means the Village of Wimberley, County of Hays, State of Texas, and includes any official, agent or employee acting on behalf of the Village.

SECTION 3. RATE SCHEDULE

A. Domestic Wastewater Rate

If BOD is less than or equal to 200-mg/l, the rate equals $6.40/1000-gallons per day when metered or based on average water consumption for the previous December, January, and February.

If BOD is higher than 200-mg/l when detected by sample testing and for customers discharging

non-permitted waste into the system, the rate shall be $10.60/1000-gallons per day. In addition, a surcharge factor of 2.0 times the calculated billing will be used for restaurant establishments in connection with the BOD level.

B. Restaurant Wastewater Rate

If BOD is greater than 200-mg/l, the rate equals $10.60/1000-gallons per day. In addition, a surcharge factor of 2.0 times the calculated billing will be used for restaurant establishments in connection with the BOD level.

C. Miscellaneous Fees

(1) Tap Fee – The tap fee is $500.00. The tap fee is limited to the average of the Utility's actual costs for materials and labor standard residential connections.

(2) Reconnection Fee – The reconnection fee is $150.00. The reconnection fee will be charged before service can be restored to a customer who has been disconnected:

(i) At the customer's request,

(ii) Because the customer:

(a) After receiving proper notice, fails to pay a delinquent account or to comply with a deferred payment agreement;

(b) After receiving proper notice, willfully violates the Utility's usage rule when that violation interferes with another customer's service;

(c) After receiving proper notice, fails to comply with valid deposit or guarantee arrangements;

(d) When a known dangerous condition exists, for as long as the condition exists;

(e) When service is established through meter bypassing, an unauthorized connection or unauthorized reconnection;

(f) In instances of tampering with the Utility's equipment.

(iii) For reasons listed in the Commission's Substantive Rules.

(3) Late Charge – A one-time late charge of $1.00 or 5.0% whichever is larger may be made on any one delinquent bill. The penalty on delinquent bills may not be applied to any balance to which the penalty was applied in a previous billing.

(4) Returned Check Charge – If a check has to be returned for insufficient funds, a charge of $15.00 will be assessed.

(5) Customer Deposit – A maximum customer deposit of $50.00 is required if a residential applicant cannot establish credit to the satisfaction of the Utility.

SECTION 4. RELATION TO OTHER ORDINANCES

The provisions of this Ordinance shall be cumulative of all other ordinances or parts of ordinances governing or regulating the same subject matter as that covered herein; provided, however, that all prior ordinances or parts of ordinances inconsistent or in conflict with any of the provisions of this Ordinance are hereby expressly repealed to the extent that such inconsistency is apparent. This Ordinance shall not be construed to require or allow any act which is prohibited by any other ordinance.

SECTION 5. EFFECTIVE DATE

This Ordinance shall take effect immediately from and after its passage and publication as may be required by governing law.

SECTION 6. ENFORCEMENT

(1) Civil and Criminal Penalties

The Village shall have the power to administer and enforce the provisions of this Ordinance as may be provided by governing law. Any person violating any provision of this Ordinance is subject to suit for injunctive relief as well as prosecution for criminal violations.

(2) Criminal Prosecution

Any person willfully and knowingly violating any provision of this Ordinance shall, upon conviction, be fined a sum not exceeding two-thousand dollars ($2,000.00). Each day that a provision of this Ordinance is violated shall constitute a separate offense. Any person who willfully and knowingly violates this Ordinance is guilty of a third degree felony.

(3) Civil Remedies

Nothing in this Ordinance shall be construed as a waiver of the Village's right to bring a civil action to enforce the provisions of this Ordinance and to seek remedies as allowed by law, including, but not limited to the following:

(a) injunctive relief to prevent specific conduct that violates the Ordinance or to require specific conduct that is necessary for compliance with the Ordinance; and

(b) a civil penalty of not less than one thousand dollars ($1,000.00) a day when it is shown that the defendant was actually notified of the provisions of the Ordinance and after receiving notice committed acts in violation of the Ordinance or failed to take action necessary for compliance with the Ordinance; and

(c) other available relief.

SECTION 7. NO VESTED INTEREST

No person shall acquire any vested interest in this Ordinance or any specific regulations contained herein. This Ordinance and any regulation enacted hereby may be amended or repealed by the City Council in the manner provided by law.

SECTION 8. SEVERABILITY

It is hereby declared to be the intention of the City Council that the phrases, clauses, sentences, paragraphs and sections of this Ordinance be severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Ordinance, and the remainder of this Ordinance shall be enforced as written.

SECTION 9. PROPER NOTICE AND MEETING

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public as required and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Chapter 551 of the Texas Government Code.

PASSED AND APPROVED this 12th day of February, 2004, by a 4 to 0 vote of the City Council of the Village of Wimberley, Texas.

VILLAGE OF THE WIMBERLEY

By: _____
Stephen J. Klepfer, Mayor

ATTEST:

_____
Adelle Turpen, City Secretary

_____
Stephen J. Harrison, City Administrator

APPROVED AS TO FORM:

_____

Patty L. Akers, Village Attorney

ORDINANCE NO. 2005-008

AN ORDINANCE OF THE VILLAGE OF WIMBERLEY, TEXAS CONCERNING THE VILLAGE WASTEWATER UTILITY SYSTEM AND PROVIDING FOR THE FOLLOWING: FINDINGS OF FACT; DEFINITIONS; ESTABLISHING A RATE SCHEDULE; RELATION TO OTHER ORDINANCES; EFFECTIVE DATE; NO VESTED INTEREST; SEVERABILITY; PROPER NOTICE AND MEETING.

WHEREAS, the City Council of the Village of Wimberley ("City Council") seeks to promote the health, safety and general welfare of the citizens of the Village; and

WHEREAS, the City Council seeks to ensure that sewer utility service is adequate and efficient for the citizens of the Village of Wimberley ("Village"); and

WHEREAS, pursuant to Texas Local Government Code Section 51.001, the City Council is authorized to adopt an ordinance that is for the good government, peace or order of the Village and is necessary or proper for carrying out a power granted by law to the Village; and

WHEREAS, pursuant to Texas Local Government Code Section 51.012, the City Council is authorized to adopt an ordinance, not inconsistent with state law, that the Council considers proper for the government, interest, welfare or good order of the Village; and

WHEREAS, pursuant to Texas Local Government Code Section 402.001, the Village is authorized to purchase, construct and operate utility systems, including sewer systems; and

WHEREAS, the Village owns the Bluehole Wastewater System and the system is operated under contract by the Guadalupe-Blanco River Authority;

WHEREAS, pursuant to Chapter 13, Texas Water Code and the Village Sewer Certificate of Convenience and Necessity Number 20936, the Village has the authority and responsibility to provide wastewater services to its customers;

WHEREAS, currently Deer Creek of Wimberley is the only customer served by the Bluehole Wastewater System; and

WHEREAS, the Guadalupe-Blanco River Authority has recommended to the City Council that an increase in sewer rates is necessary to cover the additional cost of operating the sewer system;

NOW THEREFORE, be it ordained by the City Council of the Village of Wimberley, County of Hays, State of Texas:

SECTION 1. FINDINGS OF FACT

All of the above premises are hereby found to be true and correct legislative and factual findings of the Village of Wimberley and are hereby approved and incorporated into the body of this Ordinance as if copied in their entirety.

SECTION 2. DEFINITIONS

(1) "Biochemical Oxygen Demand" or "BOD" means a measurement of the strength of the wastewater, the amount of oxygen utilized in the biochemical oxidation of the organic matter in the wastewater, determined by standard laboratory procedure in 5-days at 20-degrees Celsius, expressed in milligrams per liter (mg/l).

(2) "Commission" means the Texas Commission on Environmental Quality.

(3) "Council" means the City Council of the Village of Wimberley.

(4) "Customer" means the person receiving the sewage collection, treatment and disposal service from the Utility.

(5) "GBRA" means Guadalupe-Blanco River Authority.

(6) "Meter" means any devise used to measure water or sewage flow.

(7) "Sanitary sewage" means the liquid and water carried wastes discharged from the sanitary conveniences of dwellings and other buildings.

(8) "Sewage" means sanitary sewage and industrial waste, together with such infiltration water as may be present.

(9) "Utility" means the Village of Wimberley.

(10) "Village" or "Wimberley" means the Village of Wimberley, County of Hays, State of Texas, and includes any official, agent or employee acting on behalf of the Village.

SECTION 3. RATE SCHEDULE

A. Deer Creek of Wimberley Sewer Rate

For Deer Creek of Wimberley the rate shall be $26.40 per thousand gallons with a monthly minimum of $6,488.

The rate is re-calculated in March of each year based upon the winter water consumption for the most recent months of December, January, and February as metered by the Wimberley Water Supply Corporation.

B. Surcharge Rate

A surcharge will be applied for wastewater with a Biochemical Oxygen Demand exceeding 200 mg/l. Surcharge determination will be based upon the strength of the wastewater. Biochemical Oxygen Demand will be calculated on the average of two samples sets, those being from the current quarter and the one most previous. At the end of each quarter, GBRA will determine the average and apply the result to the calculation of the sewage rate for the Deer Creek of Wimberley. The resulting rate will apply for the next full quarter. Proto Page 3 8/18/2005

The formula will be:

Calculated cost with surcharge = ($26.40 per thousand) (Monthly water consumption)(1 + (BOD sample set) / 200 mg/l).

For BOD levels less than 200 mg/l the formula will not apply.

Sample type: Sampling for BOD will be based upon a 24 part composite sample. Samples are not flow weighted.

Sample Set Frequency: Sample frequency will be quarterly. The calendar quarters are defined as September – November, December – February, March – May, and June – August.

Sample Location: Samples shall be collected at the manhole located approximately 210 feet east of the Deer Creek lift station.

Sample Set: Sample sets shall consist of the arithmetic mean of all samples collected during a quarter. A set shall consist of no more than one (1) sample per month.

SECTION 4. RELATION TO OTHER ORDINANCES

The provisions of this Ordinance shall be cumulative of all other ordinances or parts of ordinances governing or regulating the same subject matter as that covered herein; provided, however, that all prior ordinances or parts of ordinances inconsistent or in conflict with any of the provisions of this Ordinance are hereby expressly repealed to the extent that such inconsistency is apparent. This Ordinance shall not be construed to require or allow any act which is prohibited by any other ordinance.

SECTION 5. EFFECTIVE DATE

This Ordinance shall take effect immediately from and after its passage and publication as may be required by governing law.

SECTION 6. NO VESTED INTEREST

No person shall acquire any vested interest in this Ordinance or any specific regulations contained herein. This Ordinance and any regulation enacted hereby may be amended or repealed by the City Council in the manner provided by law.

SECTION 7. SEVERABILITY

It is hereby declared to be the intention of the City Council that the phrases, clauses, sentences, paragraphs and sections of this Ordinance be severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Ordinance, and the remainder of this Ordinance shall be enforced as written.

SECTION 8. PROPER NOTICE AND MEETING

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public as required and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Chapter 551 of the Texas Government Code.

PASSED AND APPROVED this 9-1-05 day of SEPTEMBER, 2005, by a 4 to 0 - 1 ABSTENSION vote of the City Council of the Village of Wimberley, Texas.

VILLAGE OF THE WIMBERLEY

By: _____
Stephen J. Kleiper, Mayor

ATTEST:

Dell Hood by SJ Harrison

City Secretary

APPROVED AS TO FORM:

Patty L. Akers, Village Attorney

Attachment No. 9
List of Neighboring Utilities

Application by the Village of Wimberley to Amend Sewer CCN No. 20936

Attachment No. 9
List of Neighboring Utilities

1. **Aqua Development Inc.**
   1421 Wells Branch Pkwy, Ste. 105
   Pflugerville, TX 78660-3230

2. **Aqua Source Utility, Inc.**
   1421 Wells Branch Pkwy, Ste. 105
   Pflugerville, TX 78660-3230

3. **Guadalupe-Blanco River Authority**
   933 E. Court St.
   Seguin, TX 78155-5819

4. **City of Woodcreek**
   41 Champions Cir.
   Woodcreek, TX 78676

Attachment No.10

Village of Wimberley Wastewater Masterplan - Final Report (June 2002) and Land Use Assumption and Capital Improvement Plan for the Village of Wimberley Wastewater Treatment System - Technical Report (January 2005)

Application by the Village of Wimberley to Amend Sewer CCN No. 20936

Land Use Assumption and Capital Improvement Plan for the Village of Wimberley Wastewater Treatment System

Technical Memorandum

January 2005

This document is released under the authority of Philip Langley Spitzer, State of Texas P.E. #88218 on January 18, 2005 for the purpose of interim reviewonly. It is not to be used for construction, bidding or permitting.

Project Number 139090

Prepared by Black & Veatch Corporation

Black & Veatch Corporation

TECHNICAL MEMORANDUM

Land Use Assumptions and Capital Improvement Plan for the Village of Wimberley Wastewater Treatment System

B&V Project 139090.0100

January 18, 2005

To: Steve Harrison

From: Phil Spitzer, P.E.

Revisions

This memorandum serves as a modification to the Technical Memorandum (TM) submitted to the Village of Wimberley (Wimberley) on April 28, 2003. The modifications primarily address Wimberley's purchase of the Blue Hole property and the new information and observations resulting from that purchase. The purpose of this TM remains the same as the April 28, 2004 TM, to develop an implementation plan for Phase 1 facilities. Additionally, projected growth, phasing and costs are extended ten and sixteen years to facilitate the development of impact fees.

The new information included is predominantly a result of the meeting conducted on September 2, 2004 between the Village of Wimberley, representatives of the Guadalupe Blanco River Authority (GBRA), and Black & Veatch (B&V). Wimberley's purchase of the Blue Hole property resulted in GBRA assuming operations of the Blue Hole Wastewater Treatment Plant (WWTP) and availability of new information in the form of actual operating data. This revision also reflects the resulting amendment to B&V's existing scope of services, allowing provision for the services needed to adequately investigate the Blue Hole WWTP.

The following items briefly summarize the amendment to B&V's scope of services.

- Document changes to associated population and flow projections.
- Identify initial preliminary and long-term service areas.
- Modify the Implementation Plan to reflect Wimberley's Blue Hole purchase. Initial Planning Documentation previously identified the Blue Hole property as a private development.
- Evaluate the existing Blue Hole WWTP; its potential life; and ability to provide additional service from the existing facilities.
- Evaluate the existing disposal area; methods to improve current performance; ability for disposal of additional capacity; and limitations.

- Evaluate the feasibility of an interim pump and haul process from the downtown area to the existing Blue Hole WWTP.
- Evaluate current phased (50,000 gpd), and ultimate plant capacity (300,000 gpd).
- Evaluate adequacy of existing site and other future sites based upon projected growth.
- Evaluate initial collection and transmission facilities for downtown, the new proposed loop (including a proposed school) and other areas including a time schedule, permit considerations, facility plan, and cost estimate.
- Upon approval of the report, assistance in developing general connection fees, approximate service rates and ordinances may be requested.

Introduction

In June 2002, B&V prepared a Wastewater Master Plan for the Village of Wimberley, to provide technical support for the Certificate of Convenience and Necessity (CCN) application and to serve as a planning tool for development of a centralized wastewater system. The Master Plan outlined a phased implementation plan which would ultimately allow Wimberley to provide three levels of service:

- ***Phase 1*** - immediate service to downtown by making modifications to existing facilities located at the Blue Hole Park site, formerly owned by the Blue Hole Development Group and recently purchased by Wimberley;
- ***Phase 2*** - expansion of Blue Hole Park facilities to provide service to the remainder of the CCN, and allow for projected population growth until the year 2014; (Updated to 2014 in this Implementation Plan)
- ***Ultimate*** – through further expansion of Blue Hole Park site, this phase provides for projected population growth through the year 2020.

During the certification process, agreements with neighboring entities and recommendations from the Texas Commission of Environmental Quality (TCEQ), formerly known as the Texas Natural Resource Conservation Commission (TNRCC), have resulted in changes to the initial CCN boundaries. The purpose of this memorandum is to develop an implementation plan for Phase 1 facilities, which will primarily serve the downtown area, as identified in the Master Plan.

Task 203 – Phase 1 Treatment Facilities

Current Plant Conditions/ Evaluation

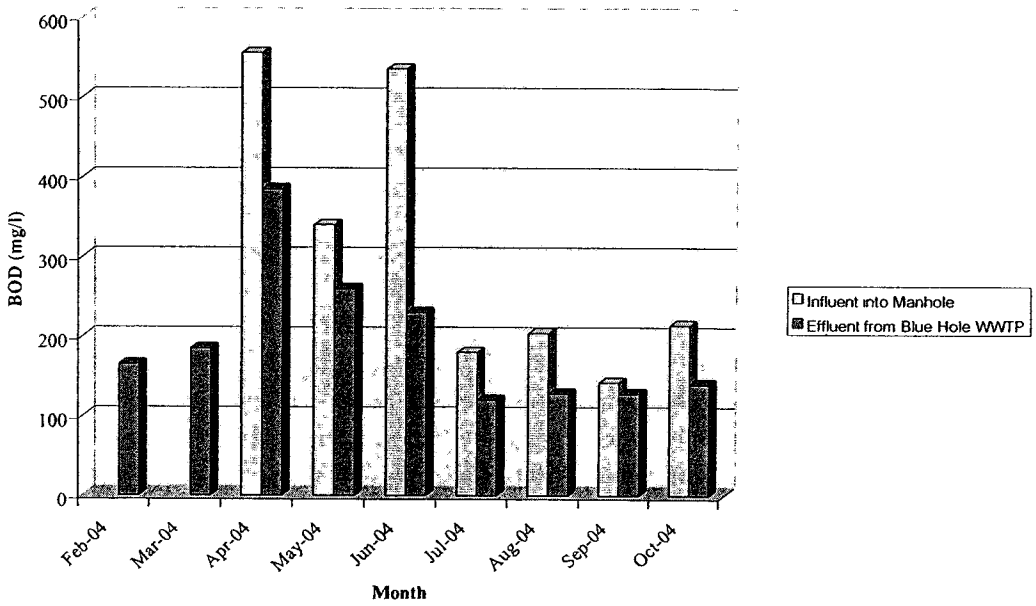
The existing Blue Hole WWTP consists of a pumping station and settling tank to remove suspended solids and their associated biochemical oxygen demand (BOD). Wastewater is disposed into the soil through a system of pressurized, underground perforated pipes located in a "leaching" field adjacent to the Blue Hole WWTP. The current permitted capacity is 15,000 gallons per day, containing 100 mg/l of BOD.

Observations regarding existing Blue Hole WWTP operations were provided by GBRA, as extrapolated from seven months of operating data. Blue Hole WWTP performance observations and impacts are summarized below:

- Current average flow is approximately 9,000 gpd.
- The current discharge limit is 100 mg/l, however only discharges over 140 mg/l require reporting.
- Influent sampling shows BOD was initially well over the threshold level of 200 mg/l. After settling the Blue Hole WWTP was producing an effluent of between 200 and 300 mg/l.
- GBRA has installed flow metering and an auto-dialer for better monitoring and control.
- Discussions and subsequent improvements made by the operators of the Deer Creek nursing home have resulted in a lowering of the influent BOD to approximately 200 mg/l (their surcharge threshold).
- Since BOD levels continue to be above 100 mg/l, the Blue Hole WWTP is currently loaded to its maximum.
- Additional recommendations to improve flows from Deer Creek include the elimination of garbage disposals and minimizing use of organic chemicals.
- As Blue Hole WWTP performance continues to improve, GBRA believes that additional flows may be handled with careful monitoring and control.

Chart 1 below documents the reduction in BOD loadings since May, and identifies the corresponding impact on discharge.

Chart 1
Blue Hole WWTP BOD



GBRA's observations of the current disposal system are listed below:

- Inspection of the leaching field pipes showed they were not plugged, as originally suspected.
- Some leakage has occurred. Most of the leaks were at points where approximately 3/8" holes had been drilled in the pipes. Presumably, the holes were drilled to relieve plugging in the pipes.
- There are 11 fields, with 5 fields in operation at any given time, and 1 cycled out per week.
- In general the disposal field has kept up with the flow in the Blue Hole WWTP. Additional contribution would need to be monitored and added gradually to determine the actual to total capacity of the Blue Hole WWTP.

Treatment Alternatives

Flows and Loadings

B&V evaluated alternative treatment facility sites based on availability, permitting, cost, and revised flow rates. Initial Master Plan flow rates for Phase 1, Phase 2 and Ultimate levels of service have been modified to reflect the Revised CCN boundary. Table 1 provides the anticipated flow rate projections for each level of service under both

Moderate Participation and Full Participation scenarios. Table 2 establishes the annual average, maximum month and peak 2-hour flow for each level of service. The Moderate Participation scenario has been developed based on a general consensus from Wimberley representatives and their knowledge of potential connections to a centralized wastewater collection system. The Full Participation scenario is based on projected development, as described in the Wastewater Master Plan dated June 2002, with modifications to the CCN boundary.

The Moderate Participation section of Table 1 shows Phase 1 with an annual average flow rate of 50,000 gpd, which will expedite design and construction by reducing or eliminating permit amendments. Amendments to the existing permit are potentially long-term tasks, and are discussed under Task 208 - Permit Requirements.

Because the existing permit requirements can be met without a major amendment, Phase 1 design and construction could begin in the near future. Also, the effluent disposal volume is small enough for disposal on the Blue Hole Park. However, the design area and treatment basin locations of the 50,000 gpd plant expansion must meet the requirements as listed in the permit in order to avoid a major amendment.

Implementation of Phase 2 will require a major amendment to the existing permit for water quantity, quality and design. Increasing the permit flow to 150,000 gpd will allow for more immediate connections from the downtown and surrounding area. Amending the plant design will also allow for the design of a membrane biological reactor (MBR) treatment plant, which would increase the effluent water quality.

The aggressive growth section outlined in Table 1 is based on data from Section 5 of the Master Plan, and assumes 100% connection upon availability to each customer. This section of the table is an update of Table 5-1 in the Master Plan. The update includes the recent revisions to the CCN boundary.

Following the September 2004 meeting, two members of the Wimberley Water and Wastewater Committee provided estimated flows from commercial businesses in the downtown area. The data was collected from tax maps, aerial maps, and telephone interviews with business owners in Town Square. The flows were based on standard unit load factors from the TCEQ and others. A summary of the commercial component is listed in Table 1A. The commercial flows have been revised from Table 1 in the original Technical Memorandum based on the summary in Table 1A.

Table 1

Elements of Flow Calculations

	Moderate Participation [1]	Full Participation [2]
	Wimberley [3] (gpd)	Wimberley (gpd)
Phase 1 (2004)		
Residential		183,975
Commercial [4]	40,000	114,700
Nursing Home	10,000	50,000
Total (2004)	**50,000**	**348,675**
Phase 2 (2014)		
Residential/Commercial	150,000	1,258,400
Total (2014)	**150,000**	**1,258,400**
Ultimate (2020)		
Residential/Commercial	300,000	1,355,600
Total (2020)	**300,000**	**1,355,600**

[1] Moderate Participation is based on general consensus of Village of Wimberley of required capacity based on knowledge of potential connections to a centralized wastewater collection system.
[2] Full Participation is based on projected development as described in the Wastewater Master Plan
[3] Refer to Table 5-1 in the Master Plan for comparison of original flow calculations

Table 1A

Phase 1 Commercial Flow Data

Business Name	Approximate Size of Business (sf)	Approximate Number of Persons	Usage Rate (gallons/day/person) or (gallons/day/square foot)	Estimated Wastewater Flow [1] (gpd)	Modified Wastewater Flow [2] (gpd)
Office/Retail	190,000 sf	3,800 people	10 gpd/sf or 5 gpd/person	19,000 gpd	12,500 gpd
Church	N/A	800 people	1 gpd/seat	800 gpd	800 gpd
Bakery	2,725 sf	N/A	0.22 gpd/sf	600 gpd	600 gpd
Club/Bar	N/A	80 people	10 gpd/person	800 gpd	800 gpd
Hotel/Motel (w// Kitchen)	3 rooms	N/A	135 gpd/room	405 gpd	405 gpd
Hotel/Motel (w/o Kitchen)	25 rooms	N/A	75-80 gpd/room	2,000 gpd	2,000 gpd
Restaurant (Full Service)	10,630 sf	577 people	1 9 gpd/sf or 35 gpd/seat	20,195 gpd	20,195 gpd
Auto Lube	2,000 sf	N/A	0.05 gpd/sf	100 gpd	100 gpd
Theater	N/A	160 people	5 gpd/seat	800 gpd	800 gpd
RV Park	N/A	36 sites	50 gpd/site	1,800 gpd	1,800 gpd
			Total Flow (gpd)	**46,500 gpd**	**40,000 gpd**

[1] Estimated wastewater flow from the Wimberley Water and Wastewater Committee based on available permit flows.
[2] Modified flow is adjusted estimated wastewater flows based on available permitted flows.

Table 2
Wimberley Project Design Flows[4]

Service Area	Annual Average Flow (gpd)[3]	Maximum Month Flow (gpd)	Peak 2-Hour Flow (gpd)
Moderate Participation[1]			
Phase 1	50,000	65,000	130,000
Phase 2	150,00	195,000	390,000
Ultimate	300,000	390,000	780,000
Full Participation[2]			
Phase 1	246,500	320,450	640,900
Phase 2	1,010,000	1,313,000	2,626,000
Ultimate	1,357,000	1,764,100	3,528,200

[1] Moderate Participation is based on general consensus of Village of Wimberley of required capacity based on knowledge of potential connections to a centralized wastewater collection system.
[2] Full Participation is based on projected development as described in the Wastewater Master Plan
[3] Refer to Table 5-1 in the Master Plan for comparison of original flow calculations.
[4] Refer to Table 5-2 in the Master Plan for comparison of original flows

Three alternatives were evaluated for the wastewater treatment facilities. Alternatives considered were interim pump and haul services for wastewater, development of a permanent site north of town in close proximity to the Woodcreek Golf Course, and use of the existing Blue Hole Park site. Results from analysis of these three alternatives are summarized in the following paragraphs.

Alternative A: Pump & Haul

The pump and haul alternative is an option for very small flows that can be captured in a tank, pumped out into a truck, and hauled to a neighboring wastewater treatment facility. Based on the revised Moderate Participation Phase 1 flow rate calculations of daily average of 50,000 gpd with a maximum month of 65,000 gpd, the pump and haul scenario would be undesirable. Even with maintaining the existing Blue Hole WWTP and reducing the daily average flow rate to 40,000 gpd the pump and haul scenario is undesirable. Furthermore, unlike with a wastewater treatment plant that could be expanded as growth dictates, the pump and haul would incur a daily cost which will not have any recoverable value. Additionally, as new customers are added and flows increase, the pump and haul process would become unfeasible due to the number of trucks required to haul the wastewater.

Alternative B: Permanent Site North of Town

The development of a permanent site north of town has extensive additional capital cost associated with land purchase and piping, plus it will require a new permit.

Alternative C: Use of the Existing Blue Hole Park Site

The Blue Hole Park site offers the advantages of an existing permit and available land for a wastewater treatment plant near the downtown area. A disadvantage is limited available land for effluent discharge.

Based on the use of the existing permit and location of the site near the collection system B&V recommends that the Blue Hole Park site be used for the Phase 1 treatment facility. As discussed under *Task 205 – Effluent Disposal*, the required acreage for Phase 1 can be located on the Blue Hole Park site. As the Blue Hole WWTP expands to meet projected Phase 2 capacity, more land will be required for irrigation. An off-site disposal area should be purchased to meet this requirement.

Since the original Technical Memorandum was issued, three significant developments have occurred which impact the original findings. One is the TPDES permit transfer of ownership from Blue Hole Development Corporation to the Village of Wimberley. TCEQ requires that GBRA be listed as a co-permittee. The second significant development impacting the original findings is a new plan for Wimberley to construct a public restroom on the Town Square.

It is estimated that as many as 500 flushes a day would occur on the weekends in the proposed public restroom, producing 1,000 to 1,500 gpd of additional flow. The public restroom may discharge to an underground holding tank, which would be periodically pumped out and the waste hauled off-site for treatment. The system would be operated by a contract haul company.

The preferred place for off loading the waste hauler truck would be the existing Blue Hole WWTP, accessed through the existing pumping station. The feasibility of connecting a temporary pipe from a convenient parking area near the nursing home to a manhole upstream of the pumping station for offloading the truck would need to be investigated. Although it currently appears that the Blue Hole WWTP has approximately 6,000 gpd of "excess" capacity when compared to the permitted capacity of 15,000 gpd, given the Blue Hole WWTP's current performance, this is not a reliable measure of capacity. Additionally, the BOD loading from a restroom holding tank is typically higher than the loading from domestic wastewater and potentially could potentially disrupt the treatment plant's performance. As previously noted, additional flows should not be added until plant performance has significantly increased, and even then would require careful monitoring.

The city asked whether the storage facilities at the restroom could be incorporated into the future wastewater collection system. Upon our cursory review, it appears the public restroom underground holding tank is not located in the planned proximity for the future

collection system lift station, and would require such deep excavation for the collection system to provide gravity flow that it would likely not be cost effective.

The third significant development is another potential source of additional flow. We investigated connecting the Baptist Church located adjacent to the Blue Hole Park site. The majority of their usage would occur on Wednesdays and Sundays. This could potentially fit into the current increased Blue Hole WWTP flow scenario, provided the public restroom hauled waste loads were coordinated to not occur on Wednesdays or Sundays. Peak restroom flows from weekend tourist traffic would need to be stored until Monday for disposal, provided odors can be adequately addressed.

Prior to Wimberley's acquisition of the Blue Hole property, it was assumed that the new Blue Hole WWTP would be constructed adjacent to the existing plant to allow development to occur in other areas and to utilize the existing power feed. Acquisition of the property provides Wimberley with additional options and fewer site restrictions for the new facilities. Following the September 2004 meeting, B&V investigated another area south and west of the existing Blue Hole WWTP. This appears to be a potentially viable and less visible location for the new facilities. Additionally, each location provided the potential for locating the treatment facilities within a structure designed to aesthetically blend into the surrounding community, such as a barn facade.

In addition to facility location, B&V also evaluated treatment type with regard to public perception, capital cost and operation and maintenance costs. The Master Plan narrowed treatment to two alternatives, conventional activated sludge and membrane biological reactor (MBR). These two alternatives were chosen for evaluation because of the interest in producing excellent quality water that meets Type 1 reuse wastewater criteria. Meeting Type 1 reuse effluent criteria allows for alternative uses and disposal methods, without creating environmental hazards. Type 1 reuse criteria require additional filtration as compared to the more typical Type 2 reuse effluent. This additional filtration is achieved either with sand filters on an activated sludge treatment plant or through use of MBR membranes. At the direction of the Village, budgetary costs associated with the MBR membrane filtration are included in *Task 209 – Revised Capital O&M Cost.*

New technology in wastewater treatment has reduced the level of odors, but because the treatment facilities are located on park land containing nature trails and soccer fields, the cost of an odor control system is included in the Task 209 – Revised Capital O&M Cost. It is anticipated that odor control facilities will be used at the equalization tank and sludge storage facility. A water regenerated carbon treatment system is recommended. The remaining treatment processes may be ventilated to atmosphere.

An implementation timeline for Phase 1 and Phase 2 is included in this TM as *Exhibit 1.* The anticipated design and construction phase implementation schedule for the Blue Hole

WWTP and the collection system is outlined below. As previously noted, the initial permitting step for implementation of Phase 1 was a minor amendment to transfer ownership from the Blue Hole Development Corporation to Wimberley which has already taken place.

Schedule for Implementation of Phase 1 and Phase 2

Phase 1	**14 months**
Design Memorandum	1 month
Preliminary Design Wastewater Treatment Plant	1 month
Preliminary Design of Collection System	1 month
Final Design Wastewater Treatment Plant	2 months
Final Design Collection System	4 months
Permitting	3 months
Construction Wastewater Treatment Plant	8 months
Construction Collection System and Service Connections	8 months
Phase 2 including Permitting	**24 months**
Design Memorandum	1 month
Preliminary Design Wastewater Treatment Plant	1 month
Preliminary Design of Collection System	1 month
Final Design Wastewater Treatment Plant	4 months
Final Design Collection System	6 months
Permitting	12 months
Construction Wastewater Treatment Plant	10 months
Construction Collection System and Service Connections	12 months

The implementation of Impact Fees will require sequential steps which should be started prior to the start of design. The first step is to form a Capital Improvement Advisory Committee. Secondly, public meetings will need to be held. The time for scheduling, notification and the holding of a public meeting could exceed two months. This includes a minimum of one public meeting addressing the land use assumptions. This includes a minimum of one public meeting addressing the Capital Improvement Plan will be required. After the public meetings the Capital Improvement Plan will need the approval of the citizens of Wimberley and subsequently adopted by the City Council.

Task 204 – Downtown Collection System

accommodated. The cost estimate shown in the report for effluent storage and application includes the storage pond, irrigation pumps and spray cannon, clearing and planting of turf. The cost of fill, suitable topsoil and grading for leveling of the fields and drainage would be additional.

Alternative B

Alternative B, irrigation at the Woodcreek Golf Course and Development, is a desirable alternative because it avoids land acquisition, simplifies permitting, and reduces maintenance costs. B&V has contacted representatives of the Woodcreek Golf Course and Development concerning their need for water. Their water schedule is more intensive than the calculated water balance. They were interested in discussing disposal options of Wimberley's reuse water. The golf course is currently supplementing its effluent flow from an existing wastewater treatment plant with well water in order to keep up with the irrigation demands. The golf course irrigates with effluent supplemented with well water for two weeks then switches to well water for five days to avoid salinity buildup. Future coordination with the existing treatment plant supplying effluent to the golf course should be pursued to verify that long term effluent disposal requirements are available. At this time they do not have storage facilities for effluent. All effluent would need to be pumped directly to their irrigation system.

Alternative C

Alternative C, spray irrigation on acquired land is a possibility but will require a minimum of 21 acres for Phase 1 disposal plus 13 acres of buffer zone, making a total of 34 acres of acquired land. Six acres of land on the Blue Hole Park site will be required to maintain proper buffer zones and adequate expansion area. Looking toward the future ultimate level of service, a disposal site would require up to 164 acres dedicated to irrigation. In addition to land acquisition costs, there are increased irrigation and crop maintenance costs.

Preliminary concepts and ultimate flow rates for Phase 2 include on-site effluent storage at the proposed Blue Hole WWTP site, and an 8 inch pipe from the Blue Hole WWTP to the Woodcreek Golf Course, which would follow the proposed corridor of the Wimberley by-pass from FM 3237 to Ranch Road 12 (approximately 1.8 miles) and pumps. Additionally, the irrigation of the Village of Wimberley by-pass right of way could be pursued with Hayes County. When compared to irrigation Alternatives A and C, irrigation Alternative B has an additional 1.8 miles of pipe and easements with an estimated cost of $583,000 (525,000 x 1.11 ENR Index). Furthermore, pump operation costs are increased due to of the increased pressure and energy required for offsite irrigation. There is no additional cost for effluent storage for on-site or off-site irrigation. The construction costs could be offset by an upfront payment by the end user or by a

monthly usage fee. Costs associated with the construction of the Alternative B are not included in *Task 209 Revised Capital and Operating Costs.*

Based on the information shown in Figure 3, it is recommended that the available area at the Blue Hole Park site be used for the effluent irrigation for Phase 1. Furthermore, because of the limited available irrigation land at the Blue Hole Park site, the Woodcreek Golf Course appears to be a reasonable option to accept the effluent flows for Phase 2.

Task 206 – Sludge Disposal

We have identified three options for sludge disposal. The first option is to process the sludge to Class A pathogen requirements, and land apply on Wimberley owned land. The second option is to acquire an agreement with local land owners and land apply the sludge on leased land, thus monitoring the sludge transport and land application process while avoiding the required land acquisition costs. The third option is process the sludge to Class B pathogen requirements, and contract the entire sludge disposal operation out to a disposal company. Independent contractors offer a variety of disposal methods, including landfill disposal, subcontract land disposal, or land disposal on their own property. The class of sludge and the sludge disposal permit dictates which method can be used.

B&V recommends that Wimberley contract out the sludge hauling and disposal service to avoid the secondary sludge treatment required to achieve Class A sludge, and to minimize land acquisition and other issues associated with land application. The design recommended in the Master Plan uses drying beds. The dried sludge can be hauled to a landfill by an independent solid waste disposal company. The cost of hauling and disposing dried sludge to a landfill during the Phase 1 level of service is approximately $10,000/year. Phase 2 is approximately $20,000/year. Sludge boxes and belt press costs will be evaluated during the design phase.

Task 207 – Effluent Criteria

Discussions with Louis Herrin of the TCEQ were based on constructing a non-discharging plant, so effluent disposal will not be required to meet stream standards. Mr. Herrin indicated the limits would probably be 20 mg/l BOD and 20 mg/l TSS for dedicated land disposal.

The Master Plan indicated the Blue Hole WWTP would produce effluent which would meet Type I Reuse Criteria which will allow unrestricted reuse. The treatment criteria for Type I Reuse water is slightly higher than for typical secondary treatment: the addition of

filtration is required to meet turbidity limits. Because land application irrigation will be on park land, it will require Type I Reuse water.

The Type I Reuse requirement will produce only slightly conservative costs, and it allows Wimberley more flexibility in how to dispose of their effluent. If membrane bioreactor treatment is used, the Type I criteria will be easily met.

Task 208 – Permit Requirements

The existing permit at the Blue Hole Park site was issued on June 13, 2001, and is valid through February 1, 2005. Earlier this year, the ownership of the permit was changed from the Blue Hole Development Group to Wimberley.

The permit is currently in the initial phase, which allows for a daily average flow rate of 15,000 gpd, but could be expanded to the final daily average flow rate of 50,000 gpd. The permit is a zero discharge permit, which allows for land application of effluent.

The first step for Phase 1 would be to prepare a design as close as possible to the design approved for the "final phase" of the permit, and submit construction documents to TCEQ. Variations from the original permit design will require a minor or major amendment, depending on the variations. The estimated time for obtaining a minor amendment is approximately three months. The estimated time for obtaining a major amendment is twelve months.

A major permit amendment will be required to expand the Blue Hole WWTP beyond 50,000 gpd, as required for Phase 2.

Steps required for a major amendment include submitting a revised design with an engineering report. The engineering report will include the information required in the Texas Land Application Permit (TLAP) application. A TLAP permit is required because of the zero discharge design and the use of irrigation as the method of effluent land application. A notice of application as stated by the TCEQ is published to fulfill public notification requirements. The application is reviewed by the administrative department and the technical department at the TCEQ. A draft permit with comments is issued, and Wimberley publishes a second notice of application. Once the comments have been addressed and accepted by TCEQ, a 5 year TLAP permit is issued. Construction should commence after the TLAP permit has been issued. To begin construction prior to permit issuance the engineer must receive authorization for special circumstances from TCEQ.

B&V made multiple site visits to the downtown area to evaluate the proposed collection system. Based on these visits and information from aerial photography, a preliminary collection system has been proposed. Exhibit 2 illustrates the preliminary downtown collection system overlaid on an aerial photograph.

Phase 1

The revised Phase 1 collection system will consist of gravity mains flowing to two small lift stations. The lift stations will pump to a manhole located along FM 3237, which will have an invert elevation allowing for gravity flow into the proposed Blue Hole WWTP. The lift stations and collection system shall be constructed within existing city right of ways and within existing utility easements or proposed utility easements to be obtained by the Village. The number of roadway crossings has been minimized, with no creek crossings. Permits for gravity and force main crossing state right of way shall be required.

Due to existing septic systems being located behind residences, a low pressure sewer may be an alternative to a gravity flow system for laterals. This technology and other pumping technologies would need to be considered during the design phase of the collection system to determine which is most cost-effective.

The main parts of the initial collection system should be sized for the Full Participation of the downtown area. This will allow for the addition of future customers and treatment plant expansion with minimal effect on the collection system.

Phase 2

Implementation of Phase 2 will require the addition of gravity mains, force mains, and lift stations.

Task 205 – Effluent Disposal

Based on the desired zero discharge permit, The Master Plan recommended effluent disposal by dedicated site irrigation. With Moderate Participation, the Phase 1 facility will be producing 50,000 gpd of effluent which will require disposal. Three alternatives for effluent disposal were evaluated to determine their feasibility and associated costs.

- Alternative A - Irrigation at the Blue Hole Park site;
- Alternative B - Irrigation at the Woodcreek Golf Course and Development;
- Alternative C - Irrigation on dedicated land acquired by Wimberley.

Table 3 is a summation of the results from a water balance calculated based on TAC 30 Chapter 309, for two options: Bermuda grass and Golf Course Turf grass grown in conditions similar to those in Wimberley, (i.e. soil conditions, slopes, water needs, precipitation, worst case conditions, etc.). Both types of grass were calculated because typically, higher maintenance grass such as golf course turf grass requires more water and therefore less land for irrigation. The land area required for disposal under these conditions is listed in Table 3. The table also includes the required effluent storage. Storage decreases as irrigation area increases. Storage results are further broken into the surface area and pond depth in order to determine the land requirements for the WWTP, storage and irrigation.

Table 3
Effluent Storage and Disposal Moderate Participation[1]

	Flow	Irrigation Area[2]	Irrigation Buffer Zone	Maximum Application Rate	Storage Required	Storage Area[3]	Storage Required	Treatment Area and Buffer Zone[4]	Total Land Requirements[5]
	MGD	Acre	Acre	in/acre/month	Volume Acre-ft	Acre	Days	Acre	Acre
Bermuda Grass									
Phase 1	0.05	21	13	2.70	2	0 29	15	5	**40**
Phase 2	0.15	62	23	2.70	7	0.88	15	5	**91**
Ultimate	0.30	124	32	2.70	14	1.75	15	5	**163**
Golf Course Turf grass									
Phase 1	0.05	11	9.5	4.91	7	0 70	46	5	**27**
Phase 2	0.15	34	17	4.91	21	2 10	46	5	**59**
Ultimate	0.30	68	24	4 91	42	4 20	46	5	**102**

[1]Moderate Participation is based on general consensus of Village of Wimberley of required capacity based on knowledge of potential connections to a centralized wastewater collection system.
[2]This acreage does not include required acreage for buffer zones.
[3]Surface area is calculated from Storage volume assuming 10' pond depth.
[4]Plant footprint and buffer zone requirements are estimated and could change depending on site layout
[5] "Total Land Requirements" is the addition of Irrigation Area + Irrigation Buffer Zone + Storage Area + Treatment Area and Buffer Zone Each addition is rounded to nearest 1 0 before addition.

Alternative A

Alternative A, spray irrigation at the Blue Hole Park site shown in Exhibit 3, has 21 acres of available land for the irrigation of Phase 1; however extensive site preparation will be required. In addition to the 21 acres required for irrigation, an estimated total of 19 acres of land will be required for the treatment area, effluent storage and buffer zones. Site preparation will be required to include soil and contour conditions equivalent to those in the water balance. Good site conditions are integral in reducing the irrigation area to a feasible size. The development of the park and anticipated soccer fields will be beneficial in creating good site conditions for irrigation. A regulation soccer field is 80 yards by 120 yards, or approximately two acres. With a 20% allowance for sideline bleachers and clear space between fields, approximately eight regulation fields could be accommodated in the 21 acres required for irrigation. Youth size fields are smaller, so more could be

B&V recommends pursuing steps to expedite the TLAP application for implementation of Phase 1. Upon approval, the design of the Blue Hole WWTP can be completed followed by its construction. This process will expedite the implementation of the collection system and wastewater treatment plant.

The initial daily capacity of 50,000 gpd for Phase 1will not be sufficient to allow for growth through the year 2014. After the Phase 1 Blue Hole WWTP is operational, B&V recommends that a permit renewal process begin with an initial daily capacity of 150,000 gpd and a final daily capacity of 300,000 gpd.

Task 209 – Revised Capital and Operating Costs

The wastewater flow quantities were modified from the Wastewater Master Plan and the April 28, 2003 TM to reflect changes in the proposed service area. The revised flows include modifications to the initial CCN boundary, along with an estimated Moderate Participation scenario and Full Participation scenario of the wastewater treatment system. All flow quantities are based on *Table 2* in Task 203. The costs for Phase 1 and Phase 2 treatment facilities were adjusted by the same proportion as the flows. *Table 4* provides an estimated capital cost for Phase 1 and Phase 2 implementation of the Conventional Treatment Plant with filtration. The costs from the original Technical Memorandum included a column for construction of the treatment plant off of the Blue Hole property. Because Wimberley now owns the Blue Hole property, the column has been deleted and the only consideration is locating the plant on the Blue Hole Park site.

Also noted were a few additional items not initially included in the Master Plan report which should be included in the treatment plant cost summary. They are items which will be required by regulation, as follows:

1. **Secondary Source of Power** - This can be either a second power line from different substation or a standby generator with an automatic throw-over switch. The standby generator was chosen as the default option. The secondary power line can be evaluated in design and implemented if it is found to be more cost effective.
2. **Laboratory and Administrative Facilities** – TCEQ regulations require plants to have administrative facilities with an office, basic maintenance area, restrooms, and wash-up facilities for the operations staff. This can be a small prefabricated building set up on-site.
3. Ten percent mark-up for general site work and security - This includes roads, lighting, fences, etc....
4. A cost for enclosing the facilities is shown based on a very simple, pre-engineered barn-like structure.

5. Costs have been updated to a 2004 ENR Index of 4327 (a percent increase of 1.11% from April 28, 2003).

The capital costs have been calculated based on Wimberley's creating a collection system and treatment plant which would serve the downtown area.

Table 4

Wastewater Treatment Plant Implementation

Revised Cost Breakdown

	Phase I	Phase II
	50,000 gpd	150,000 gpd
Capital Costs		
Collection System		
Gravity Flow System	$975,000	$515,000[1]
Pump Stations	$300,000	$300,000[2]
Force Mains	$505,000	$235,000[43]
Easements (15' width along State Right of Ways)[4]	$65,000	$20,000[5]
Collection System Sub-Total	**$1,845,000**	**$1,070,000**
Wastewater Treatment Plant		
Land Purchase	-	-
Headworks	$59,000	-
Influent Pumping & Equalization	$150,000	$75,000
Package Treatment Plant	$250,000	$400,000
Membrane	$100,000	$200,000
Sludge Digester	Included	Included
Drying Beds	$30,000	$25,000
UV Disinfection	$25,000	$50,000
Standby Power	$24,000	$35,000
Building	$120,000	-
Administration & Lab	$25,000	$100,000
Sitework & Yard Piping	$60,000	$83,000
Odor Control	$90,000	$30,000
Effluent Storage and Application	$150,000	$285,000
Wastewater Treatment Plant Sub-Total	**$1,083,000**	**$1,283,000**
Sub-Total Construction Cost	**$2,928,000**	**$2,353,000**
Sub-Total Construction Cost with ENR Cost Index (1.11%)	**$3,250,000**	**$2,612,000**

Table 4 cont'd.

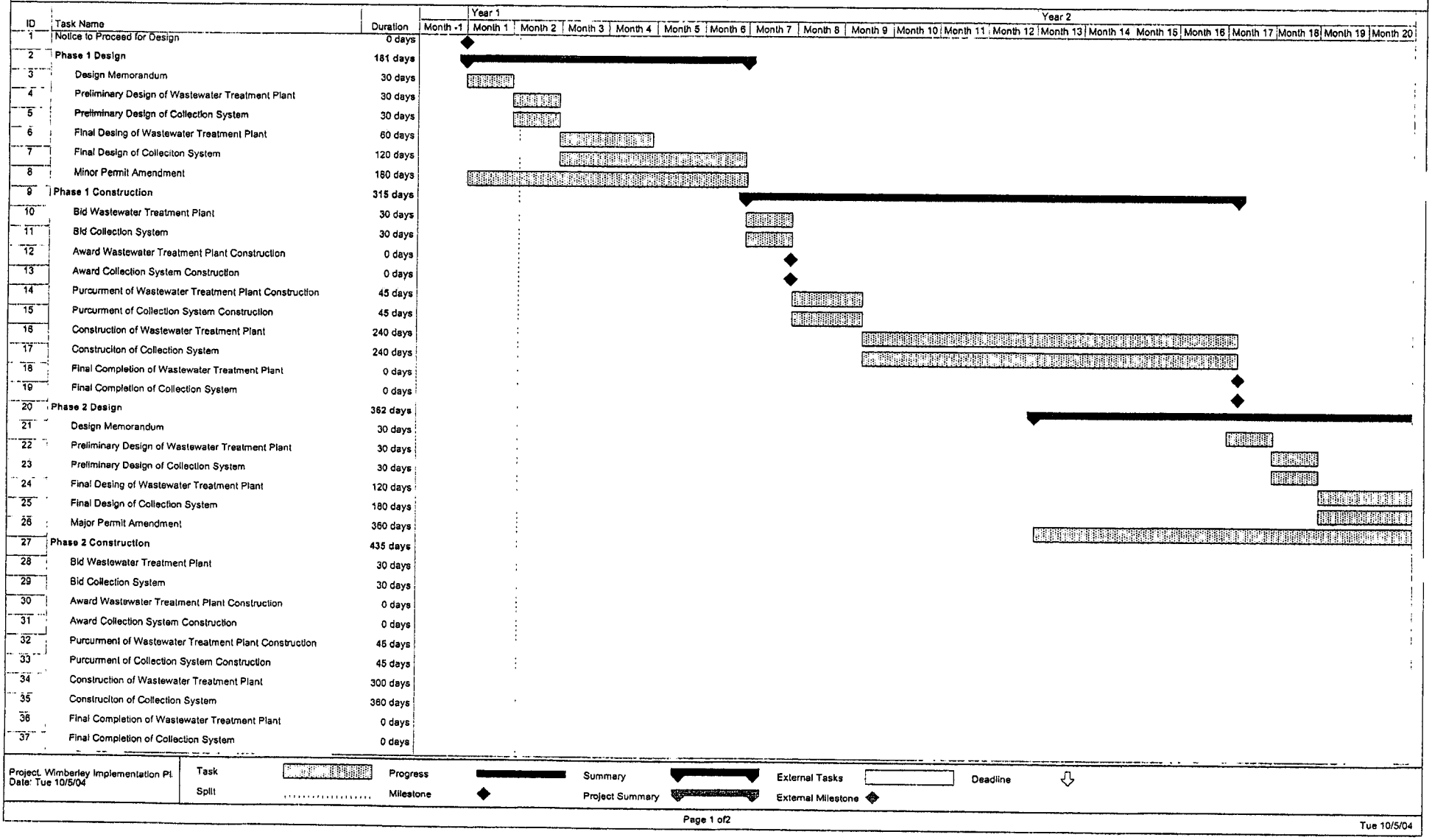
Wastewater Treatment Plant Implementation

Revised Cost Breakdown

	Phase I	Phase II
	50,000 gpd	150,000 gpd
Engineering, Legal & Village Administrative (14% of Sub-Total Const. Cost with ENR Cost Index)	$455,000	$366,000
Contingency (15% of Sub-Total Const. Cost with ENR Cost Index)	$487,500	$392,000
Easement Acquisition (Land Agent, Appraiser, etc)	$75,000	$75,000
Easement Surveying	$60,000	$60,000
Geotechnical Investigation	$20,000	$20,000
Subsurface Utility Investigation	$20,000	$20,000
Construction Inspection	$75,000	$75,000
Sub-Total Capital Cost	**$4,442,500**	**$3,620,000**
Finance Administration (15% of Sub-Total Capital Cost)	$666,500	$543,000
Total Upfront Cost[6]	**$5,109,000**	**$4,163,000**

[1]To allow for future development the cost includes an additional 2000 lf of piping.
[2]To allow for future development the cost includes an additional pumping station.
[3]To allow for future development the cost includes an additional 1000 lf of piping.
[4]Collection system easement costs are along FM12 and FM3237.
[5]To allow for future development the cost includes additional easements.
[6]Interest costs are not included in the Total Upfront Cost.

Exhibit 1
Village of Wimberley
Wastewater Implementation Plan Schedule
Phases 1 adn 2



ID	Task Name	Duration
1	Notice to Proceed for Design	0 days
2	**Phase 1 Design**	181 days
3	Design Memorandum	30 days
4	Preliminary Design of Wastewater Treatment Plant	30 days
5	Preliminary Design of Collection System	30 days
6	Final Desing of Wastewater Treatment Plant	60 days
7	Final Design of Colleciton System	120 days
8	Minor Permit Amendment	180 days
9	**Phase 1 Construction**	315 days
10	Bid Wastewater Treatment Plant	30 days
11	Bid Collection System	30 days
12	Award Wastewater Treatment Plant Construction	0 days
13	Award Collection System Construction	0 days
14	Purcurment of Wastewater Treatment Plant Construction	45 days
15	Purcurment of Collection System Construction	45 days
16	Construction of Wastewater Treatment Plant	240 days
17	Construciton of Collection System	240 days
18	Final Completion of Wastewater Treatment Plant	0 days
19	Final Completion of Collection System	0 days
20	**Phase 2 Design**	362 days
21	Design Memorandum	30 days
22	Preliminary Design of Wastewater Treatment Plant	30 days
23	Preliminary Design of Collection System	30 days
24	Final Desing of Wastewater Treatment Plant	120 days
25	Final Design of Collection System	180 days
26	Major Permit Amendment	360 days
27	**Phase 2 Construction**	435 days
28	Bid Wastewater Treatment Plant	30 days
29	Bid Collection System	30 days
30	Award Wastewater Treatment Plant Construction	0 days
31	Award Collection System Construction	0 days
32	Purcurment of Wastewater Treatment Plant Construction	45 days
33	Purcurment of Collection System Construction	45 days
34	Construction of Wastewater Treatment Plant	300 days
35	Construciton of Collection System	360 days
36	Final Completion of Wastewater Treatment Plant	0 days
37	Final Completion of Collection System	0 days

Exhibit 1
Village of Wimberley
Wastewater Implementation Plan Schedule
Phases 1 adn 2

ID	Task Name	Duration
1	Notice to Proceed for Design	0 days
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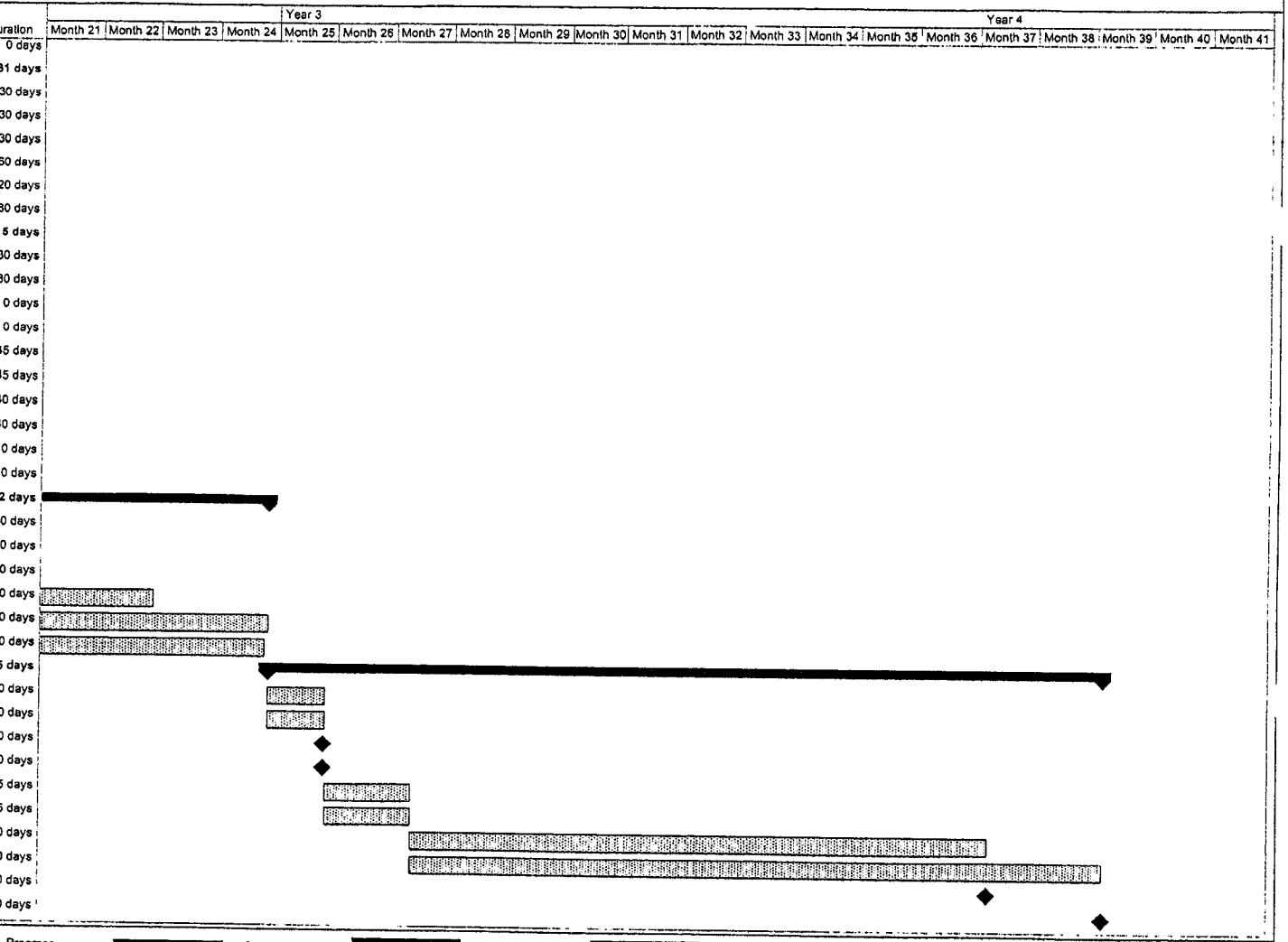
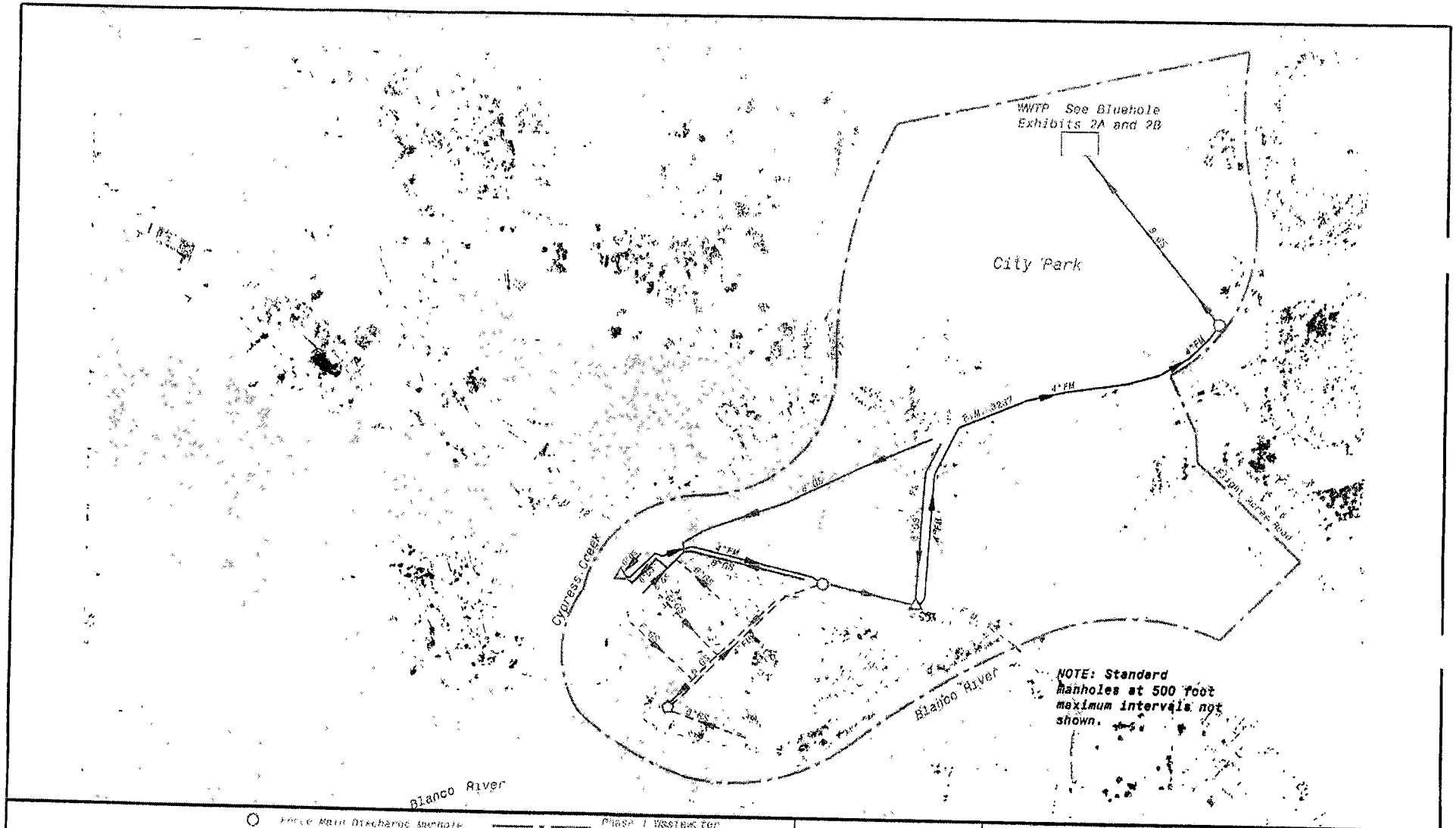
7	Final Design of Colleciton System	120 days
8	Minor Permit Amendment	180 days
9	**Phase 1 Construction**	315 days
10	Bid Wastewater Treatment Plant	30 days
11	Bid Collection System	30 days
12	Award Wastewater Treatment Plant Construction	0 days
13	Award Collection System Construction	0 days
14	Purcurment of Wastewater Treatment Plant Construction	45 days
15	Purcurment of Collection System Construction	45 days
16	Construction of Wastewater Treatment Plant	240 days
17	Construciton of Collection System	240 days
18	Final Completion of Wastewater Treatment Plant	0 days
19	Final Completion of Collection System	0 days
20	**Phase 2 Design**	362 days
21	Design Memorandum	30 days
22	Preliminary Design of Wastewater Treatment Plant	30 days
23	Preliminary Design of Collection System	30 days
24	Final Desing of Wastewater Treatment Plant	120 days
25	Final Design of Collection System	180 days
26	Major Permit Amendment	360 days
27	**Phase 2 Construction**	435 days
28	Bid Wastewater Treatment Plant	30 days
29	Bid Collection System	30 days
30	Award Wastewater Treatment Plant Construction	0 days
31	Award Collection System Construction	0 days
32	Purcurment of Wastewater Treatment Plant Construction	45 days
33	Purcurment of Collection System Construction	45 days
34	Construction of Wastewater Treatment Plant	300 days
35	Construciton of Collection System	360 days
36	Final Completion of Wastewater Treatment Plant	0 days
37	Final Completion of Collection System	0 days



Project: Wimberley Implementation Pl
Date: Tue 10/5/04

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Tue 10/6/04

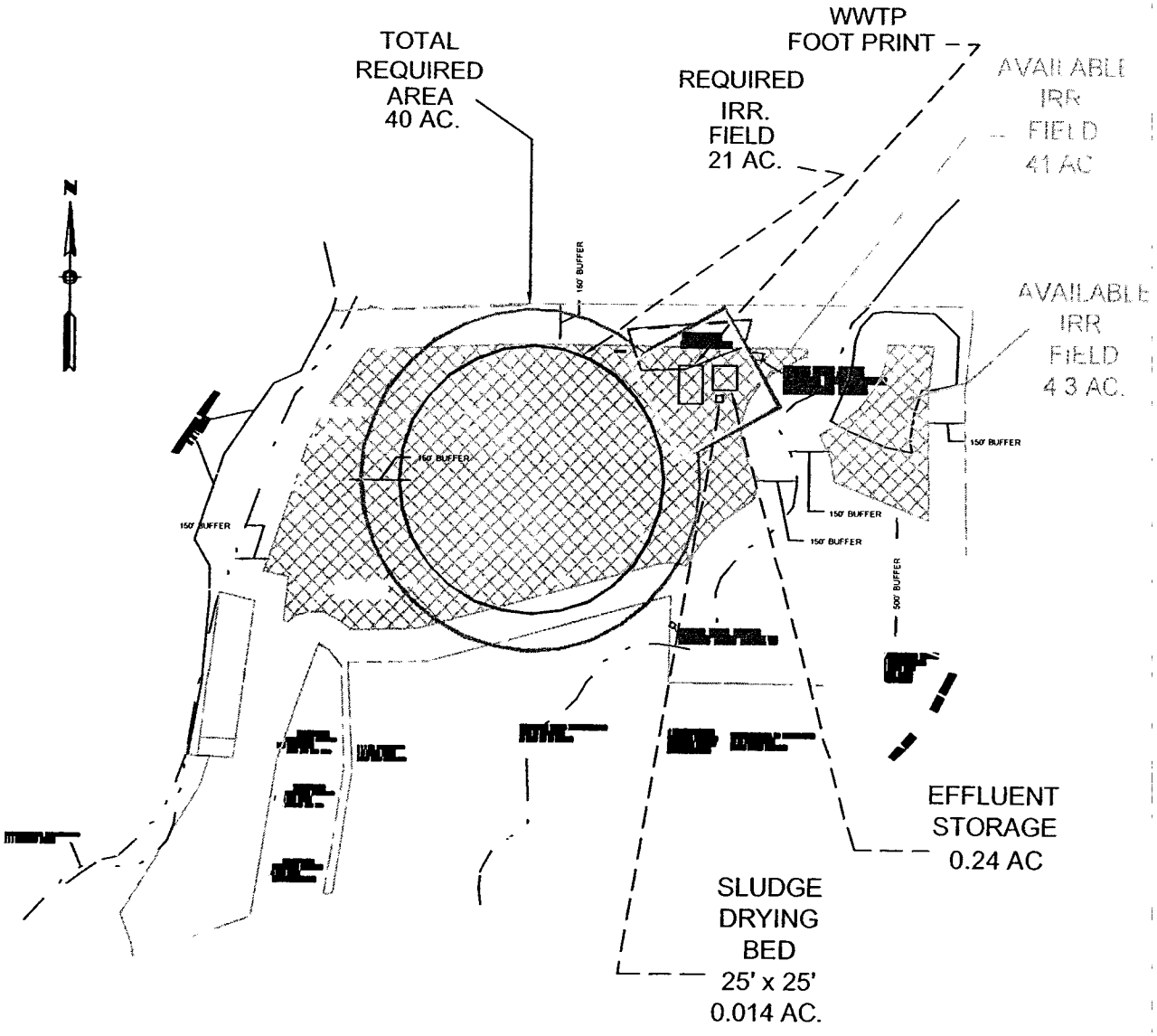


BLACK & VEATCH
San Antonio, Texas

VILLAGE OF WIMBERLEY, TEXAS
WASTEWATER MASTER PLAN INPLEMENTATION PLAN

Collection System Layout
Exhibit 2

Jan 13, 2006 - 11:14am C:\CYGNET\CACHE\temp\139090\Collection System Plan.dwg



NOTE: Required Irrigation fields are based on water balance and buffer zone requirements for Phase 1, 50,000 gpd annual average flow rate.

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Corporation
San Antonio, Texas

Village of Wimberley

VILLAGE OF WIMBERLEY, TEXAS
WASTEWATER MASTER PLAN INPLEMENTATION PLAN

CITY PARK IRRIGATION
SCHEMATIC EXHIBIT 3

September 1, 2004 Project No.: 131874 By: MCC

August 20, 2004

Mr. Larry Vinklarek
Keystone Construction Inc.
7100 Old Bee Caves Road
Austin, Texas 78735

Re: Wimberley Community Center Construction Report and Submittal Request on behalf of Aqua Texas

Dear Larry:

Rick Bush and I representing Aqua Texas conducted a site inspection on August 18, 2004. Juan Carlos Rosales represented Keystone Construction. Juan uncovered the wastewater trench approximately every 50 feet, exposed the pipe in one location and removed the manhole cover for our inspection. In addition, we inspected the tie into the existing lift station. The following are comments generated from our inspection:

1. The push on PVC fitting at the lift station needs to be replaced with a permanent fixed fitting.

2. A temporary plug needs to be placed in the wastewater effluent line at the manhole to keep dirt from getting into the lift station. The wastewater line and manhole must be cleaned to remove dirt and debris.

3. The plans specify that the PVC wastewater line shall be bedded on each side of the pipe with 8" of sand or pea gravel. The gravel that is currently used for pipe bedding does not appear to meet the specifications. Please submit the gradation specifications and a sample of the bedding used. The current bedding needs to meet the specifications listed below. If the bedding does not meet these specifications than the bedding will need to be replaced.

   If bedding sand is used the sand shall be clean, granular and homogenous composed mainly of mineral matter. The resistivity shall not be less than 3000 ohms-cm. Size gradation of sand for bedding shall be as follows:

Sieve Size	% Retained by Weight
¼"	0
#60	75-100
#100	95-100

   If pea gravel is used the gravel shall meet ASTM C 33. Size gradation of pea gravel shall be as follows:

Sieve Size	% Retained by Weight
¾"	0
½"	0-25
¼"	90-100

4. The wastewater manhole detail in the plans calls for an adapter to be placed around the influent and effluent lines. I was not able to see the adapter from the inside of the manhole. Please verify that the adapter is in place. In addition, grout needs to be placed around each adapter before testing the manhole.

5. Please submit the following items:

   A) Type, size and manufacturer of manhole
   B) Proposed acceptance testing procedure and associated test equipment
   C) Proposed adjustment technique
   D) Proposed product for coating the interior of the new manhole

Aqua Texas would like to have a representative onsite during the placement of the bedding and the testing of the wastewater line and manhole. Please contact me 72 hours prior to commencing construction at (512) 441-9493.

Sincerely,

Amy T. Frederick, P.E.

ALF
I:Documents\A074\006\ltrkeystone8-20-04.doc

cc: Mr. Ricky Bush - Aqua Texas
Mr. Faris Abboushi – Loomis Austin
Mr. Steve Harrison – Village of Wimberley
Mr. John Haralson – G Creek, Inc.

FINAL REPORT

VILLAGE OF WIMBERLEY

WASTEWATER MASTERPLAN

JUNE 2002

BLACK & VEATCH

FINAL REPORT

VILLAGE OF WIMBERLEY

WASTEWATER MASTERPLAN

JUNE, 2002

STATE OF TEXAS
W. R. DAVIS, III
52516
REGISTERED
PROFESSIONAL ENGINEER
11 Jun 02

STATE OF TEXAS
PHILLIP LEWIS COOK
83129
LICENSED
PROFESSIONAL ENGINEER
6-11-2002

BLACK & VEATCH
CORPORATION

Village of Wimberley, Texas
Wastewater Masterplan
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