



**VEENSTRA & KIMM, INC.**

3000 Westown Parkway • West Des Moines, Iowa 50266-1320

515-225-8000 • 515-225-7848(FAX) • 800-241-8000(WATS)

March 8, 2004

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James Sanders  
City Administrator  
City of Johnston  
6221 Merle Hay Road  
P.O. Box 410  
Johnston, Iowa 50131-0410

JOHNSTON, IOWA  
STORMWATER DRAINAGE STUDY  
CENTRAL BASIN AREA  
FUNDING RESPONSIBILITY

This letter is a follow up to the recent discussions concerning the implementation of the improvements identified in the Central Drainage Basin study. The study identified improvements to the storm sewer system, sanitary sewer system and water system.

The improvements consist of a major storm sewer along an alignment that generally follows the proposed development, a sanitary trunk extending from Johnston Drive northerly through the development area, and a water main extending through the development area from Johnston Drive to NW 62<sup>nd</sup> Avenue.

The location of the proposed improvements was coordinated with the service area requirements of the Central Basin Area and two possible developments. The developments include the Christenson property located between NW 55<sup>th</sup> Avenue and NW 57<sup>th</sup> Avenue and the Jerry's Homes property located southerly of NW 60<sup>th</sup> Avenue.

The proposed improvements serve the two development parcels. The proposed improvements could serve other undeveloped property generally located in the easterly part of the Central Drainage Basin. The improvements provide improvements to the level of service to existing residential development located in the westerly part of the Central Drainage Basin.

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The improvements to serve the Central Basin Area are generally considered larger than the types of improvements normally associated with a subdivision of the size proposed in the Central Basin Area. The storm sewer is much larger than the normal storm sewer to serve both development areas and other adjoining areas that are not currently in active development.

The water main is increased in size to a 12-inch diameter main to provide a north-south loop through the Central Basin Area. The sanitary sewer is larger and deeper than a typical 8-inch lateral sewer to provide service to the entire Central Basin Area, including development areas and developed residential areas.

The development of the utilities in the Central Basin Area raises several questions with respect to the responsibility for the cost for construction of the improvements. The issues raised by the Central Drainage basin include:

- responsibility for oversizing within development areas
- responsibility for utilities located outside of the development area, including outlet facilities and facilities between the development areas.

Before proceeding with any improvements within the Central Basin Area, it is necessary to determine the responsibility for the cost of construction of the improvements. The City should determine the improvements are the responsibility of the developer and the improvements considered beyond the responsibility of the developer. Improvements beyond the responsibility of the developer may require action by the City of Johnston to facilitate and finance the improvements.

Most of the City of Johnston's policies with respect to development responsibility and City participation have been established in the western and northern parts of the City of Johnston. In comparison to the areas where the City has developed its policies, the Central Basin Area is somewhat unique.

First, the parcels of undeveloped property in the Central Basin Area are relatively small. It will not be possible for a single developer to implement a project of such a size to cost-effectively finance significant oversizing or offsite improvements. Second, many of the improvements identified in the Central Basin Area provide benefits to the existing development. The storm sewer intercepts portions of the west flowing drainage and reduce the need for major drainage improvements within the development area. The 12-inch water main reinforces the existing 6-inch water main loop that is marginally adequate to serve the residential area. The construction of the sanitary trunk sewer provides a less costly outlet for sewer service to some of the residential areas in the portions of the Central Drainage Basin area.

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The City of Johnston has not established written policies to guide its participation in development related projects. Rather than utilizing formal written policies, the City of Johnston has developed general guidelines from past practice. The City's participation on previous projects provide general guidelines against which the City's participation in a future project can be evaluated. This procedure provides some flexibility in determining individual project participation within the context of general policies regarding participation.

Veenstra & Kimm, Inc. has reviewed the past practices of the City of Johnston relating to cost participation to determine their applicability to the Central Basin area. The City's past participation practices do not exactly apply to the situation in the Central Basin area. The City of Johnston's practices have been guided by development in undeveloped areas. The practices do not exactly fit the mix of developed and undeveloped areas in the Central Basin area. However, the City of Johnston's practices can be generally applied to the proposed Central Basin improvements in a manner that provides a reasonably accurate allocation of responsibility. The key elements of the City of Johnston's general policy on participation are summarized as follows:

1. The cost for utilities within a development required for normal service are the responsibility of the developer.
2. The City will participate in the funding of significant costs for oversizing of improvements within developments.
3. The developer is responsible for reasonable costs to extend utility service and storm drainage to the development. The City will assume responsibility for excessive costs for extending utility service to a development.

The Central Basin Area improvements address each of these three elements. The most significant issues relate to oversizing within the development and responsibility for extending utility service to the development.

Under the City's normal policy, the City would be responsible for oversizing of utilities within the development and the developer would be responsible for reasonable costs to extend utility service to the development.

The Central Basin Area improvements include an offsite extension downstream of the Christenson property. The Jerry's Homes parcel will require extension of utilities from NW 57<sup>th</sup> Avenue to the parcel. In both cases it does not appear the developer would be fully responsible for the offsite utilities. The scope and cost of the offsite utilities would exceed the City's normal test for reasonableness. Offsetting this responsibility would be the City's responsibility for oversizing within the development.

The typical application of the City's policy would involve cost sharing between the City and the developer for the offsite improvements and cost sharing involving oversizing within the development area. This level of cost sharing will create some logistical issues relating to the implementation of the improvements.

Based on review it appears a minor change in the method of allocating responsibility results in an equitable allocation of costs in a manner that is more cleanly divided between the development responsibility and City responsibility. The modification involves adjusting the responsibility for the developer's offsite costs and the City's oversizing improvements.

The proposed modification would result in the following allocation of responsibility:

1. The City of Johnston would be responsible for offsite storm sewer, water main and sanitary sewer. This responsibility would include the City's responsibility for the outlet storm sewer along the future Pioneer Parkway corridor.
2. The developer would be responsible for all costs of improvements within the development, including oversizing and additional depth.

Under this cost allocation there would be a clean division of responsibility between the City and the developer. This procedure allows the City to establish cost recovery methods for its investment in the offsite utilities. For the water main, the City can establish a connection fee district for future development. For the sanitary sewer, the City can establish a connection fee district. The connection fee district charge would include a credit for previously paid assessments for trunk sewer service.

The City is not able to establish a connection fee district for storm sewer improvements. The City would have the option to establish a special assessment for storm sewer improvements. Alternatively, the City may wish to consider the establishment of a stormwater utility. The stormwater utility would generate funds to assist in the payment of costs for the offsite storm sewer improvements.

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Enclosed is a copy of a drawing showing the proposed improvements to serve the Central Basin Area. The improvements have been identified to show as a solid line the improvements that will be the responsibility of the City. The dashed lines show the improvements within the development that will be the responsibility of each developer.

If you have any questions or comments concerning the project, please contact us at 225-8000.

VEENSTRA & KIMM, INC.

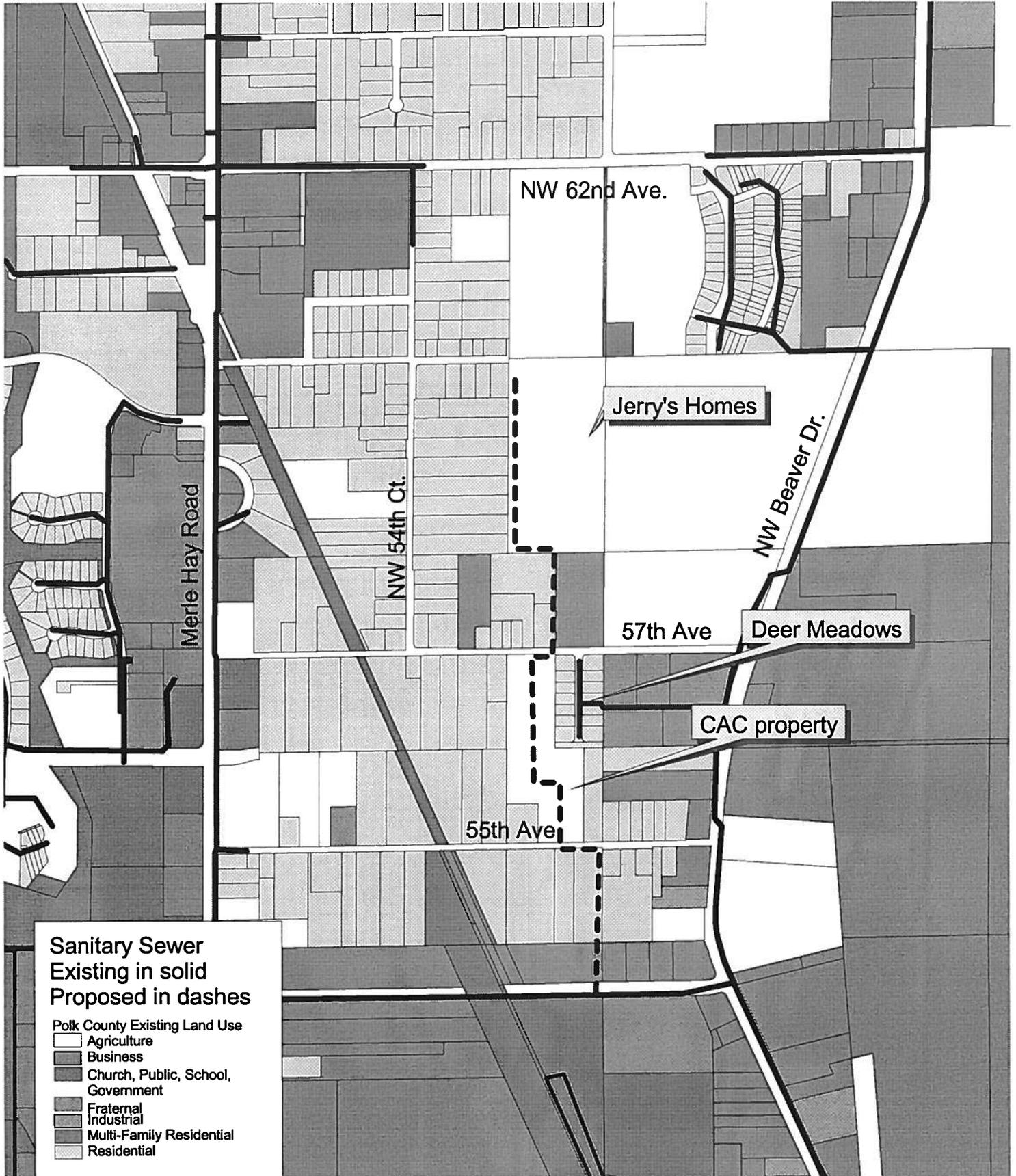
**Original Signed by  
H. R. Veenstra Jr.**

H. R. Veenstra Jr.

168241  
Enclosure  
cc: Gene Martens w/enclosure

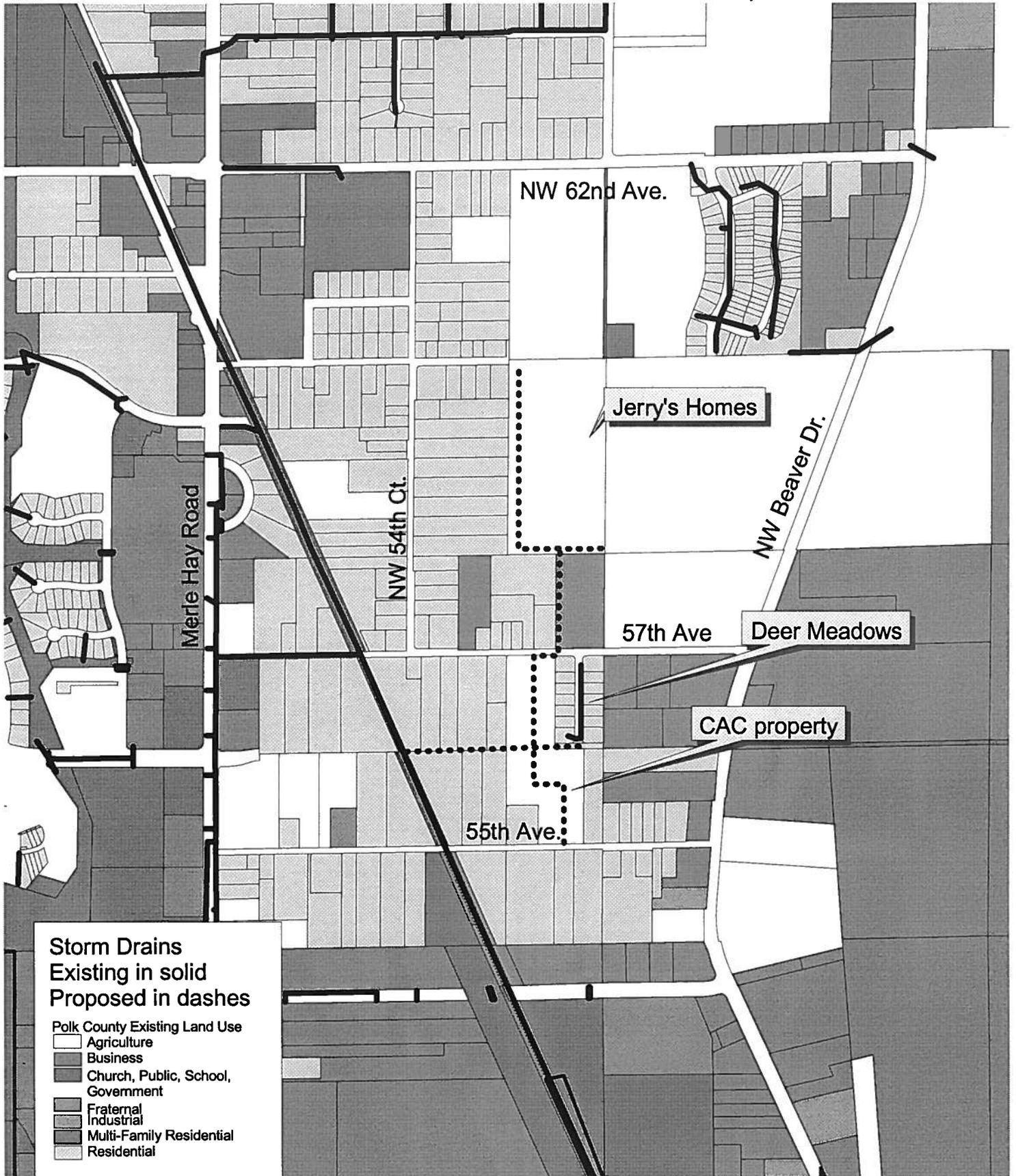


# Central Basin-Sanitary Sewer illustration to accompany Bob Veenstra letter of March 8, 2004



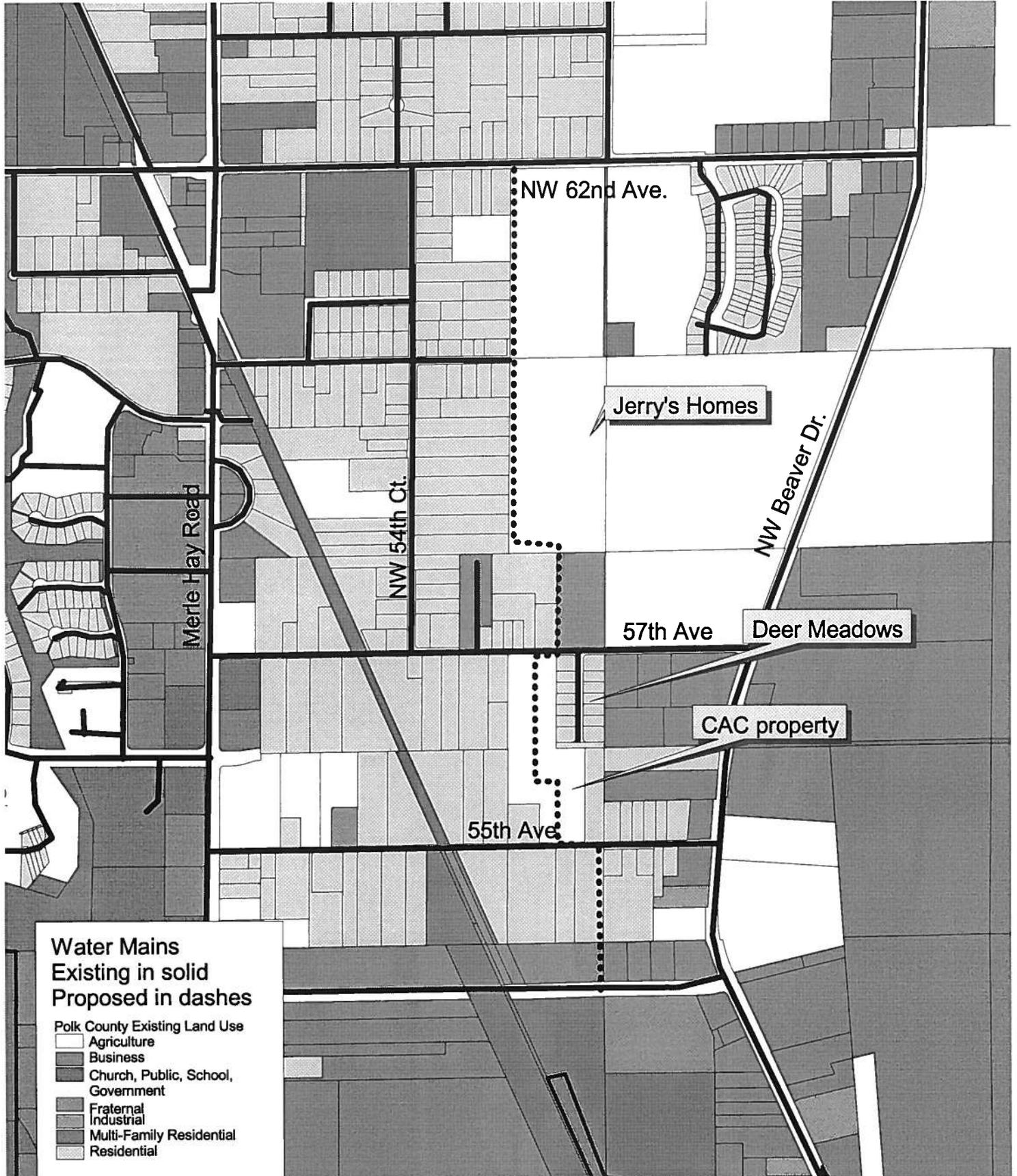


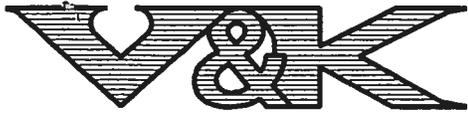
# Central Basin-Storm Drains illustration to accompany Bob Veenstra letter of March 8, 2004





# Central Basin-Water Mains illustration to accompany Bob Veenstra letter of March 8, 2004





**VEENSTRA & KIMM, INC.**

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June 30, 2004

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Johnston, Iowa 50131-0410

JOHNSTON, IOWA  
STORMWATER DRAINAGE STUDY  
CENTRAL BASIN AREA  
RECOMMENDED IMPROVEMENT PLAN  
FINANCING PLAN

This letter is to set forth a summary of the long range utility plan developed for the Central Basin area. The letter report outlines the recommended financing for utility improvements in the Central Basin area.

The Central Basin area extends from approximately NW 55<sup>th</sup> Avenue on the south to approximately NW 62<sup>nd</sup> Avenue on the north. The western boundary of the Central Basin area generally follows the former railroad right-of-way.

The eastern boundary of the Central Basin area is located westerly of NW Beaver Drive. The eastern boundary of the Central Basin area is the ridge line between the area that flows naturally easterly toward the Des Moines River and the area that tends to flow southerly and southwesterly toward Beaver Creek.

The northern part of the Central Basin area generally slopes southerly and southwesterly. The central and southern areas of the Central Basin area are marked by flat terrain and poorly defined drainage patterns.

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The Central Basin area consists of existing residential development and undeveloped areas generally in agricultural production. Drainage in the Central Basin area is by overland flow and roadway ditches. There is no comprehensive storm sewer system serving the Central Basin area.

The south flowing 72-inch storm sewer located along the former railroad right-of-way is located westerly along the westerly boundary of the Central Basin area. The Central Basin area was included in the drainage area for the 72-inch storm sewer when the project was constructed in 1984.

The study was initiated by inquiries received by the City of Johnston concerning possible development of two currently undeveloped parcels. With the lack of storm drainage facilities the City was not in a position to identify improvements to provide stormwater drainage for the two development parcels. Also, the residential areas of the Central Basin area lacks a comprehensive stormwater drainage plan.

The initial purpose of the Central Basin area stormwater drainage study was to develop a comprehensive drainage plan for the basin. During the study, it became apparent development in the Central Basin area would impact the sanitary sewer system and water system. The scope and approach of the Central Basin area study was modified and expanded to include the development of a long range utility plan for stormwater drainage, sanitary sewer and water mains.

## **STORMWATER DRAINAGE**

The storm sewer outlet for the Central Basin area is the 72-inch storm sewer along the former railroad right-of-way. The stormwater drainage analysis focused on identifying storm sewer improvements within the Central Basin area to convey runoff to the 72-inch storm sewer.

The stormwater study identified two primary alternatives to provide stormwater drainage. Both alternatives were based on two separate storm sewers to serve the entire Central Basin area. One alternative involved a separate storm sewer serving the northern part of the Central Basin area and one storm sewer serving the southern part of the Central Basin area. Under this alternative the northern part of the basin would be served by a storm sewer that started at NW 57<sup>th</sup> Avenue and extended northeasterly toward NE 60<sup>th</sup> Avenue. The second storm sewer would serve the area between NW 55<sup>th</sup> Avenue and NW 57<sup>th</sup> Avenue.

Under the second alternative the existing residential area generally north of NW 57<sup>th</sup> Avenue would be served by one storm sewer system. The future development area generally located easterly of existing residential development would be served by the second storm sewer system. The development area storm sewer would start at the future Pioneer Parkway and extend easterly to the proposed development and northerly to approximately NW 60<sup>th</sup> Avenue.

The total cost for the two alternatives for the storm sewer were considered comparable. The first alternative would have required construction of storm sewer in existing residential areas to serve development areas. Under the City's normal policies this would have required the use of a special assessment in residential areas. Although the residential areas would benefit from the storm sewer, the residential neighborhoods have not been engaged in the discussion concerning the storm sewer.

Both of the alternatives result in two separate storm sewer systems of approximately the same cost. Under the first alternative both storm sewers would be constructed initially increasing the City's total initial cost for the project. The second alternative reduces the initial cost and avoids the issue of potential special assessments for the residential areas. Under the preferred alternative the storm sewer in the residential area can be constructed at a future date when the City and the residents determine it appropriate.

The preferred alternative is the second alternative of one storm sewer serving the development areas and a second storm sewer serving the existing residential areas. The preferred storm sewer alternative consists of the following key elements:

1. Storm sewer along future corridor of Pioneer Parkway from 72-inch storm sewer easterly to Deer Meadows. The storm sewer provides future drainage for the extension of Pioneer Parkway. The storm sewer provides an outlet for the infiltration pond at Deer Meadows and provides the outlet for the storm sewer extending northerly to NW 60<sup>th</sup> Avenue.
2. Storm sewer extending from Pioneer Parkway northerly to approximately NW 60<sup>th</sup> Avenue. This storm sewer serves the two development parcels and the commercial area along the north side of the NW 57<sup>th</sup> Avenue corridor.
3. Storm sewer south to NW 55<sup>th</sup> Avenue. This storm sewer would extend south through the residential development to serve the area between the future Pioneer Parkway and NW 55<sup>th</sup> Avenue.

## **SANITARY SEWER**

Sanitary sewer service to the Central Basin area could be provided westerly to Merle Hay Road Trunk Sewer or easterly to the NW Beaver Drive Trunk Sewer. The Merle Hay Road Trunk Sewer is constructed at a deeper elevation and could serve most of the Central Basin area. The Merle Hay Road Trunk Sewer is located a significant distance westerly of the Central Basin area. The distance between Merle Hay Road and the Central Basin area would increase the cost for sewer service westerly to Merle Hay Road.

The trunk sewer along NW Beaver Drive was constructed at an elevation several feet higher than the sanitary sewer along Merle Hay Road. The elevation of the NW Beaver Drive Trunk Sewer was established as part of the extension of the trunk sewer along Johnston Drive and northerly to NW 55<sup>th</sup> Avenue. The trunk sewer along NW Beaver Drive is too high to provide full basement sewer service to all of the Central Basin area.

While the Central Basin area could be served by both the Merle Hay Road Trunk Sewer and the NW Beaver Drive Trunk Sewer, the two alternatives are considered less than ideal.

The alternative for providing sewer service is to construct a trunk sewer from Johnston Drive northerly through the Central Basin area. The trunk sewer would be designed to serve all of the unsewered areas in the Central Basin area, including the development areas and existing residential development.

The sanitary sewer would start at Johnston Drive and extend northerly to approximately NW 60<sup>th</sup> Avenue. The sewer would be located easterly of the existing residential development and would follow corridors through the proposed development area.

The sanitary sewer would be constructed at depths adequate to provide basement sewer service to all of the Central Basin area. Although sewer service to the existing residential areas may not be provided at the time the sewer is constructed the new trunk sewer would facilitate future sewerage of the existing residential areas located easterly of the former railroad right-of-way, especially the area north of NW 57<sup>th</sup> Avenue.

## **WATER MAIN**

The third issue to be addressed in the Central Basin area is the availability of adequate water service. Most of the water mains in the Central Basin area were constructed as part of the original water system in the mid-1970s. A new water main was constructed along Johnston Drive in the 1990s.

The water mains along NW Beaver Drive, NW 62<sup>nd</sup> Avenue and Johnston Drive are 12-inch diameter. The water main on Merle Hay Road is 16-inch diameter. The water mains along NW 55<sup>th</sup> Avenue, NW 57<sup>th</sup> Avenue and the other residential streets in the Central Basin area are 6-inch diameter.

The 6-inch diameter mains do not meet the City of Johnston's current standard for a minimum 8-inch diameter water main. The 6-inch diameter water mains are not adequate to support significant development in the Central Basin area.

Previous planning indicated the need for additional large diameter water mains in the Central Basin area. The goal would be to complete a large diameter water main from Johnston Drive to NW 62<sup>nd</sup> Avenue. The new loop would connect to the 6-inch water mains in the Central Basin area.

The recommended improvement is the construction of a 12-inch diameter water main generally through the development area extending from Johnston Drive to NW 62<sup>nd</sup> Avenue. The water main provides a second loop in the area between Merle Hay Road and NW Beaver Drive.

The water main would improve the fire flow capacity in the 6-inch water mains in the Central Basin area. The 12-inch water main would provide adequate capacity for the proposed development areas.

## **UTILITY PLAN**

The study of the Central Basin area identified three improvements included in the utility master plan. The improvements include a storm sewer, sanitary sewer and water main. The attached figure shows the general location of the proposed improvements.

The location of the improvements should be considered schematic. The exact location of the improvements can be adjusted for coordination with existing land use and future development.

The proposed improvements provide a foundation for utility service to the Central Basin area. The initial storm sewer system provides service to the eastern part of the Central Basin area. The storm sewer would address the runoff from the proposed development.

The storm sewer provides a benefit to existing residential areas located in the westerly part of the Central Basin area. A portion of the runoff from the eastern part of the Central Basin area flows westerly toward the residential areas. The new storm sewer will intercept the overland flow and reduce the total runoff to the residential areas. A future storm sewer could be constructed to serve the residential areas.

A trunk sanitary sewer provides an improved outlet for sanitary sewer service to the residential areas without directly impacting the residential areas or requiring the construction of sanitary sewer through currently developed areas.

The water main provides improved fire protection and reliability to the residential areas in the Central Basin area. The improved looping and increased capacity improves both fire flow and reliability in the residential areas and provides adequate capacity to serve development. The 12-inch water main eliminates any impact on the existing water mains from the new development.

#### **FUNDING RESPONSIBILITY**

The improvements in the Central Basin area consist of a major storm sewer along an alignment that generally follows the proposed development, a sanitary trunk sewer extending from Johnston Drive northerly through the development area and a water main extending through the development area from Johnston Drive to NW 62<sup>nd</sup> Avenue.

The location of the proposed improvements was coordinated with the service area requirements of the Central Basin area and two possible developments. The developments include the Christiansen property located between NW 55<sup>th</sup> Avenue and NW 57<sup>th</sup> Avenue and the Jerry's Homes property located southerly of NW 60<sup>th</sup> Avenue.

The proposed improvements serve the two development parcels. The proposed improvements could serve other undeveloped property, generally located in the easterly part of the Central Basin area. The improvements provide an enhanced level of service to existing residential development located in the westerly part of the Central Basin area.

The improvements to serve the Central Basin area are generally larger than the size of improvements normally associated with a subdivision of the size possible in the Central Basin area. The storm sewer is much larger than a normal storm sewer to serve development areas and other adjoining areas that are not currently in active development. The larger storm sewer is caused by the limited slope for the storm sewer and the extent of the drainage area upstream of the development area.

The water main is increased in size to a 12-inch diameter main to provide a north-south loop through the Central Basin area. Typically, an 8-inch water main would be required for a development area of the size proposed in the Central Basin area.

The 12-inch sanitary sewer is larger and deeper than a typical 8-inch lateral sewer to provide service. The larger and deeper trunk sanitary sewer is necessary to provide service to the entire Central Basin area, including both the development areas and existing residential areas.

The City of Johnston has long utilized a policy requiring developers to construct improvements within the development of a size and character normally associated with development. The long range plan for the Central Basin area raises two issues that extend beyond the base policy of cost responsibility. These issues are:

- cost responsibility for oversizing within development areas
- cost responsibility for utilities located outside of the development area.

In previous development projects, the City has funded oversizing of utilities in certain areas. On other occasions the City has required the developer to provide utility oversizing.

The City has funded certain offsite utilities, especially if the extent of the offsite utilities is extensive and the offsite improvements provide benefit beyond a particular development. On the other hand, the City has required developers to extend utilities to a site.

Most of the City of Johnston's policies with respect to development cost responsibility and City participation have been established in the western and northern parts of the City of Johnston. In comparison to the areas where the City has developed its policies, the Central Basin area is somewhat unique.

First, the parcels of undeveloped property in the Central Basin area are relatively small. It will not be possible for a single developer to implement a project of such a size to cost-effectively finance significant oversizing or offsite improvements.

Second, many of the improvements identified in the Central Basin area provide benefits to existing development. The storm sewer intercepts portions of the west flowing drainage and will reduce the need for major storm drainage improvements within the existing residential area.

The 12-inch water main reinforces the existing 6-inch water mains and provides improved flow and reliability to the residential area. The construction of the sanitary trunk sewer provides an improved less costly outlet for future sewer service to the existing residential areas in the Central Basin area.

The City of Johnston has developed general guidelines for cost participation in oversizing and offsite utilities. The City's participation on previous projects provides general guidelines to evaluate the City's participation in the projects in the Central Basin area. The procedure provides some flexibility in determining individual project participation within the context of general policies regarding cost participation.

The City of Johnston's practices can be generally applied to the Central Basin area improvements in a manner that provides a reasonably accurate allocation of cost responsibility and would be generally consistent with the practice on previous projects.

The key elements of the City of Johnston's general policy are summarized as follows:

1. The cost for utilities within a development required for normal service are the responsibility of the developer.
2. The City will participate in the funding of significant costs for oversizing of improvements within developments.
3. The developer is responsible for reasonable costs to extend utility service and storm drainage facilities to the development. The City may assume responsibility for excessive cost for extending utility service to a particular development.

The Central Basin area improvements addresses each of these three elements. The most significant issues relate to oversizing within the development and responsibility for extending utility service to the development. Under the City's normal policy, the City would be responsible for some oversizing of utilities within the development. On the other hand, the developer would be responsible for reasonable costs to extend utility service to the development.

The improvements within the Central Basin area have been allocated into five separate geographic areas. The geographic areas include the two areas of development being considered by Christenson and Jerry's Homes. The remaining three areas are offsite improvements. The offsite improvements are located southerly and westerly of the Christenson property, between the Christenson and Jerry's Homes properties and northerly of the Jerry's Homes property to NW 62<sup>nd</sup> Avenue.

The enclosed aerial photograph shows the master plan improvements identified by the improvements within a development area and the improvements that are located outside of a development area. The improvements within the development area are shown in a dashed color. The three areas of offsite improvements are shown in a solid color.

One application of the City's policy would involve cost sharing between the City and the developer for the offsite improvements and cost sharing involving oversizing within the development area. This level of cost sharing will create logistical issues relating to the implementation of the improvements. A minor change in the method of allocating responsibility appears to result in an equitable allocation of cost in a manner that more clearly defines cost responsibility between the developer and the City.

The modification involves adjusting the responsibility for the developers offsite cost and the City's responsibility for oversizing costs. The proposed modification would result in the following simple allocation of responsibility:

1. The City of Johnston would be responsible for the offsite storm sewer, water main and sanitary sewer. This responsibility would include City responsibility for the outlet storm sewer along the future Pioneer Parkway corridor.
2. The developer would be responsible for all costs of improvements within the development, including oversizing and additional depth costs.

Under this cost allocation there would be a clean allocation of responsibility between the City and the two developers.

The City will incur costs for constructing the improvements in the three offsite areas. The offsite improvements will provide service to undeveloped areas and to existing developed areas. The procedure allows the City the opportunity to establish methods of recovering the cost for a portion of its offsite utility improvements.

For the water main and the sanitary sewer, the City can establish a connection fee district. The connection fee district would include charges for future sewer and water service. In the case of sewer service, the existing residential areas connecting to the sanitary sewer would receive a credit for any previous assessment paid for trunk sewer service for the Merle Hay Road Trunk Sewer or the NW Beaver Drive Trunk Sewer.

The City is not able to establish a connection fee district for storm sewer improvements. The City of Johnston would have the option to establish a special assessment for the storm sewer improvements. However, there are disadvantages to the establishment of the special assessment for the storm sewer.

Alternatively the City may wish to consider the establishment of a stormwater utility. The stormwater utility would generate funds to assist in the payment of costs for the offsite storm sewer improvements. As the City continues to grow it is anticipated the City's cost for offsite storm drainage and stormwater maintenance improvements will continue to increase. If the City establishes stormwater utility, the utility could fund a wide range of improvements throughout the City of Johnston.

The Central Basin area study is proposing an allocation of costs for the storm sewer, sanitary sewer and water main improvements that provide for the developer to be responsible to construct the improvements within the development and the City to be responsible to fund the improvements located in the three areas that are not considered for development.

## **IMPLEMENTATION**

The master plan outlines three major improvements to provide utility service to the Central Basin area. The master plan outlines a cost allocation between potential developers and the City of Johnston.

The City of Johnston has met with representatives of the Christenson property and the Jerry's Homes property. Both have indicated support for cost allocation procedures.

Both of the property owners have indicated a desire to proceed with development of the property in 2004. To undertake the development it is critical for utility service be coordinated between the City's improvements and the developers' improvements.

Both of the developments will require completion of the City improvements in the three offsite locations. Jerry's Homes requires the completion of the improvements on the Christenson property in addition to completion of the City improvements. The Christenson property could develop without simultaneous completion of the Jerry's Homes improvements, provided the City improvements are completed.

## **COST SUMMARY**

Estimates of cost have been prepared for the improvements in the three offsite areas identified in the master plan. Detailed cost estimates were not prepared for the improvements within the two development parcels. It is anticipated the alignment of the utilities within the development parcels will be coordinated with the actual development. As a result, the length and cost of the improvements within the development cannot be precisely determined at this time.

James P. Sanders  
June 30, 2004  
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For purposes of the cost summary the offsite utilities have been identified in three separate areas. These areas are as follows:

- Offsite Area 1 - Southerly and westerly of the Christenson property
- Offsite Area 2 - NW 57<sup>th</sup> Avenue to Jerry's Homes property
- Offsite Area 3 - NW 60<sup>th</sup> Avenue to NW 62<sup>nd</sup> Avenue

The estimated cost for the utility improvements in each of the three offsite areas is:

Offsite Area 1 - Storm Sewer	\$209,510
Offsite Area 1 - Sanitary Sewer	148,928
Offsite Area 1 - Water Main	<u>74,112</u>
Subtotal	\$432,550
Offsite Area 2 - Storm Sewer	\$182,912
Offsite Area 2 - Sanitary Sewer	74,880
Offsite Area 2 - Water Main	<u>61,632</u>
Subtotal	\$319,424
Offsite Area 3 - Water Main	<u>\$96,768</u>
Subtotal	\$96,768
<b>Total</b>	<b>\$848,742</b>

The estimated cost for the offsite utilities in the Central Basin area is approximately \$848,742.

If you have any questions or comments concerning the project, please contact us at 225-8000.

VEENSTRA & KIMM, INC.



H. R. Veenstra Jr.

168241  
Enclosure



ITEM NO. WS#5

**OFFICE OF THE CITY ADMINISTRATOR**

Johnston, Iowa  
September 5, 2006  
WORK SESSION

**SUBJECT:** Discuss revisions to the Central Basin Utility Master Plan.

**ACTION REQUIRED:**  
 Direction to Staff *Drw*

**SYNOPSIS:**

Staff has recently met with Advantage Homes, the potential buyers of the Polich property, which is a 45 acre parcel located on the west side of NW Beaver Drive, generally between NW 57<sup>th</sup> and NW 62<sup>nd</sup> Avenues. This property is currently undeveloped with the exception of three houses which have access to NW Beaver Drive. The potential developers of this property are working to develop the property with industrial and residential uses consistent with the Comp Plan and the existing zoning in the area. However, limited sewer and storm sewer service is immediately available to the subject property. This area was extensively studied in 2003 and 2004 and the City Council adopted the Central Basin Utility Master Plan which outlined how sanitary sewer, storm sewer and water service could be provided to the area. This plan required cooperation of properties along Johnston Drive and NW 55<sup>th</sup> Avenue who were interested in development at the time of the plan, but have not pursued development since that time. Jerry's Homes, who owns property immediately west of the Polich property has remained interested in development, but does not have adequate sewer or storm sewer service to the site.

Based upon the proposed development of the Polich property, staff requested Veenstra and Kimm to review the area and look at alternatives to providing sanitary sewer and storm sewer to the area without utilizing an alignment which crossed properties where the owners have not indicated a desire to proceed. The result of this review is an alternative alignment that would require the cooperation of three adjoining properties, which have all indicated a desire to proceed with development and would provide service that is equivalent to that previously proposed with the original plan.

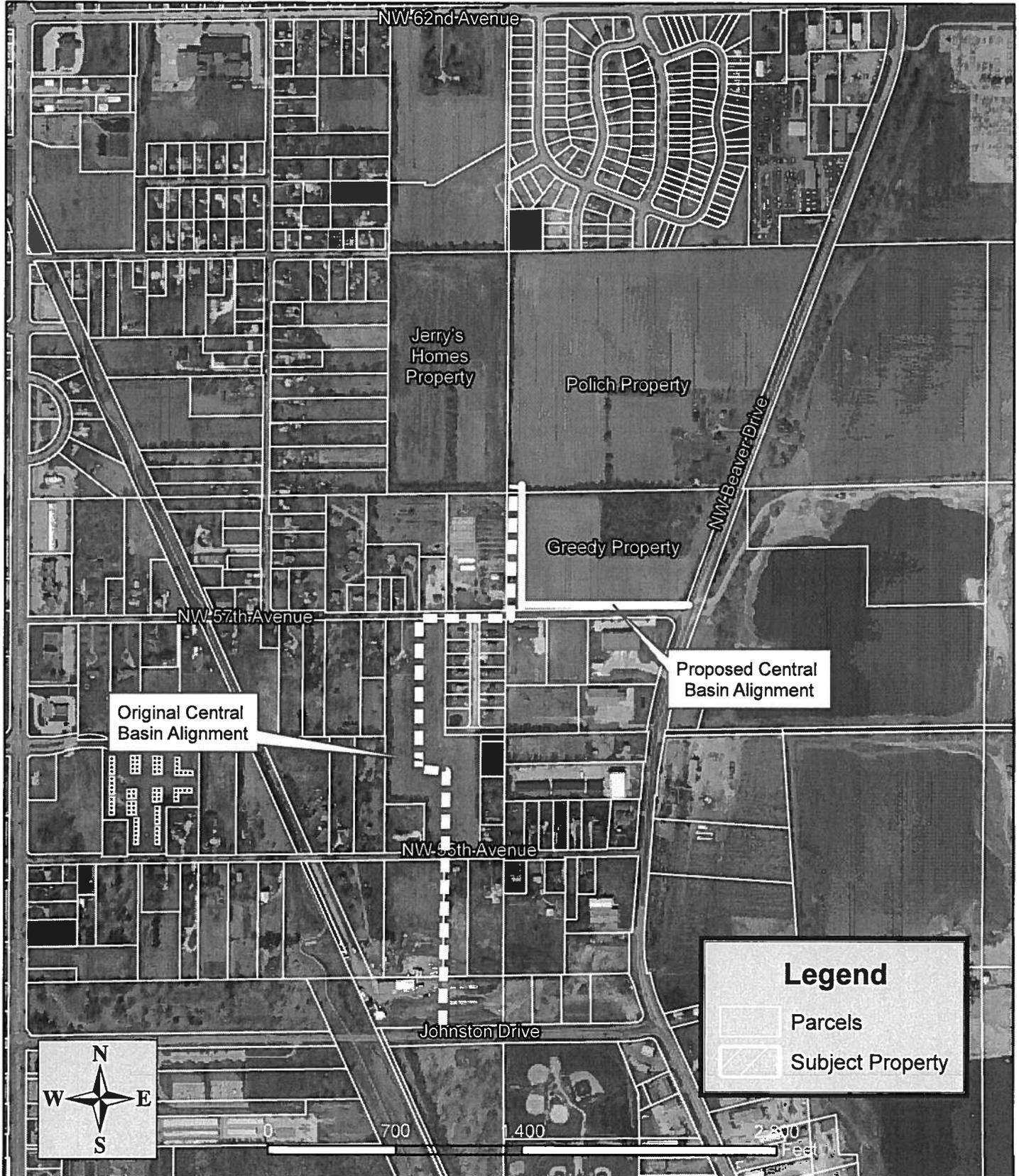
Two letters are attached from Bob Veenstra, one address water and storm sewer issues, the other addresses sanitary sewer issues. A vicinity map is also attached which identifies the areas in question and shows conceptually the proposed change in the sanitary sewer alignment.

**RECOMMENDATION:**

Staff recommends proceeding with the revisions to the Central Basin Plan as outlined in Bob Veenstra's August 17, 2006, letter, but Council direction is desired.



# General Alignments for the Central Basin Sanitary Sewer





**VEENSTRA & KIMM, INC.**

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August 17, 2006

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RECEIVED  
AUG 21 2006

JOHNSTON, IOWA  
CENTRAL BASIN PLAN  
POLICH PROPERTY DEVELOPMENT  
STORM DRAINAGE AND WATER MAIN

This letter is a follow up to the August 15, 2006 meeting to discuss possible development of the Polich property on the west side of NW Beaver Drive. The westerly part of the Polich property slopes southwesterly and is considered part of the Central Basin area.

The Central Basin Plan developed in 2004 included recommendations for providing sanitary sewer, storm drainage and water main in the Central Basin area. The plan proposed for the Polich property would deviate from the Central Basin Plan. The proposed development of the entire Polich property is based on a plan that would focus the utilities easterly toward NW Beaver Drive rather than southerly through the Central Basin area.

By separate correspondence the writer has addressed issues relating to the sanitary sewer in the Central Basin area. This letter is to summarize issues relating to the storm drainage and water main.

The proposal for the development of the Polich property would involve the construction of an east flowing storm sewer that would extend from east of NW Beaver Drive westerly along the south line of the Polich property. The storm sewer would continue westerly to serve the Jerry's Homes property.

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The original basin plan showed the northern part of the Central Basin area being storm sewered southerly and westerly toward the 72-inch storm sewer along the former railroad right-of-way. The alternative plan proposed for the development of the Polich property would route the stormwater flow easterly to the Des Moines River basin.

The concept proposed for the Polich property was considered as part of the Central Basin. At that time it did not appear there was any interest in the development of the Polich property. The Central Basin plan selected an alternative that was not dependent on the development of the Polich property.

The stormwater plan proposed for the Polich property is in some respects preferable to the original Central Basin Plan. The alternative proposal routes the northern part of the Central Basin directly east toward the Des Moines River. This reduces the flow tributary to the 72-inch storm sewer along the former railroad right-of-way. By diverting a portion of the Central Basin area easterly the effective capacity of the 72-inch storm sewer to serve the balance of its tributary area is increased.

The Central Basin plan included an alternative that would convey stormwater westerly along NW 57<sup>th</sup> Avenue and westerly along the future corridor of Pioneer Parkway to the 72-inch storm sewer. These two elements of the Central Basin plan are still available with the Polich property alternative.

Use of the Polich property alternative does not negatively impact the storm sewer alternatives for the southern part of the Central Basin area. The storm drainage plan for the southern part of the Central Basin area can be adapted based on the proposed plan to serve the Polich and Jerry's Homes properties.

The Central Basin Plan included a schematic concept for a north-south water main from NW 55<sup>th</sup> Avenue to NW 62<sup>nd</sup> Avenue. The north-south water main was designed to reinforce the water mains that currently serve the Central Basin area. The goal of the plan was to provide additional larger diameter mains through the Central Basin area. These mains would reinforce the relatively limited capacity of the 6-inch water mains along the streets within the Central Basin area.

The Central Basin Plan recognized the water main plan would need to be adapted based on individual developments. The north-south component of the Central Basin Plan water main is not significantly impacted by the development of the Polich property. The Polich property is located easterly of the alignment selected for the north-south water main.

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Development of the Polich property provides an opportunity for additional reinforcement of the water mains in the Central Basin. The Polich property is likely to include a street connection from NW Beaver Drive westerly. This street connection will probably be interconnected with the southern portion of the Jerry's Homes property. By constructing a larger diameter water main through the Polich property, the City can develop an additional east-west leg of its water distribution system.

In summary, the alternative storm sewer plan proposed for the Polich property can easily be implemented with slight modifications to the storm sewer concept in the Central Basin plan. By diverting the flow easterly there is reduced runoff tributary to the existing 72-inch storm sewer. The alternative plan may actually be preferable to the original plan.

The Central Basin water main plan is not directly impacted by the Polich property. The concept of a north-south main is not affected by the Polich property development. Development of the Polich property provides the opportunity for an additional east-west connection that will improve the overall water main capacity in the Central Basin area as it continues to develop and interconnect with the existing water mains.

If you have any questions or comments concerning the project, please contact us at 225-8000.

VEENSTRA & KIMM, INC.



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JOHNSTON, IOWA  
STORMWATER DRAINAGE STUDY  
CENTRAL BASIN AREA  
ALTERNATIVE SANITARY SEWER PLAN

Since the development of the Central Basin Plan in 2004 there has been continuing interest in development in the Central Basin area northerly of NW 57<sup>th</sup> Avenue. Since completion of the Central Basin plan there appears to be little additional interest in development of the area between NW 55<sup>th</sup> Avenue and NW 57<sup>th</sup> Avenue.

The Central Basin Plan identified an area westerly of NW Beaver Drive and easterly of the abandoned railroad right-of-way from NW 55<sup>th</sup> Avenue to south of NW 62<sup>nd</sup> Avenue that would be difficult to sewer easterly to existing trunk sewer along NW Beaver Drive. The Central Basin Plan recommended extending a sewer from Johnston Drive northerly through the Central Basin area to provide sewer service to the Central Basin area. The sanitary sewer in the Central Basin Plan would provided a sanitary sewer that would be deep enough to allow for basement sewer service to all of the areas within the Central Basin.

There has been additional interest in the development of the currently undeveloped parcels north of NW 57<sup>th</sup> Avenue, including the Greedy property, Polich property and Jerry's Homes property. The City has received inquiries requesting to modify the Central Basin Plan to serve specific parcels within the Central Basin area.

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One of the objectives of the Central Basin Plan was to identify a comprehensive solution that would serve all of the Central Basin. Without a comprehensive solution individual properties could develop and provide infrastructure. This approach risked the possibility of some areas located in the Central Basin area being effectively excluded from sanitary sewer service.

An example of this concern is sanitary sewer constructed in 2000 serving the Monahan Business park. Although the sanitary sewer extends westerly to the west boundary of the Monahan Business Park, the sewer is too shallow provide sewer service to all of the properties west of the Monahan Business Park that may need sewer service. Although a portion of the Central Basin area is served by the Monahan Business Park sewer, the sewer does not address the sewer service issues in the Central basin area.

The City of Johnston recently received a request to consider future development of the Polich property. The request included the concept of a sanitary sewer along the south boundary of the Polich property from NW Beaver Drive westerly. The sanitary sewer would be designed to allow it to be extended westerly to serve the Jerry's Homes property.

Veenstra & Kimm, Inc. has completed a review of both the sewer plan for the Polich property and the overall Central Basin Plan. The purpose of the review was to determine if the proposal for providing sewer to the Polich property satisfies the objective of a comprehensive solution to the Central Basin Plan.

The NW Beaver Drive Trunk Sewer at the south boundary of the Polich property is approximately Elevation 814.6. For a small diameter lateral sewer it is recommended the sewer be located at least 1-foot above the flow line of the 21-inch trunk sewer. The preliminary plan anticipated extending sewer service westerly at a minimum slope of 0.40%.

With a sewer along the southerly boundary of the Polich property it appears the sewer could be extended westerly to the southerly part of the Jerry's Homes property with an invert elevation of approximately 825 to 826. This would locate the sewer approximately 10 feet to 11 feet below the natural ground elevation at the southern boundary of the Jerry's Homes property.

A review of the proposal to provide sewer service to the Polich property would indicate it would provide a satisfactory sewer outlet for the westerly part of the Polich property and the southerly part of the Jerry's Homes property. The sewer proposal would not provide sewer service to the area to the south of the Polich and Jerry's Homes property. The

corridor along NW 57<sup>th</sup> Avenue has ground elevations in the range of 834 to 836. To provide sewer service to this area it would be necessary to develop another outlet sewer either southerly or easterly. Although the proposal for sewer on the Polich property meets the objective of providing sewer service to the Polich and Jerry's Homes parcels, it does not satisfy the objective of a comprehensive plan for sewer service in the Central Basin area.

The evaluation of the overall Central Basin area has identified one alternative that appears to provide reasonably comprehensive sewer service to the Central Basin area without the need to construct the sewer from Johnston Drive northerly to NW 57<sup>th</sup> Avenue. The cost of the alternative plan is less than the cost for the original Central Basin Plan.

The alternative provides comparable sewer service to the area north of NW 57<sup>th</sup> Avenue. In the area immediately south of NW 57<sup>th</sup> Avenue sewer service with the alternative is nearly comparable to the original Central Basin Plan.

In the area immediately north of NW 55<sup>th</sup> Avenue sewer service would be available from the alternative. The sewer service would be considered acceptable. The original Central Basin Plan provides a better sewer alternative for the area immediately north of NW 55<sup>th</sup> Avenue.

The most difficult area to serve in the Central Basin is located immediately adjacent to the former railroad right-of-way along the future extension of Pioneer Parkway, midway between NW 55<sup>th</sup> Avenue and NW 57<sup>th</sup> Avenue. The ground adjacent to the railroad right-of-way is low as approximately Elevation 830.

This area could be provided sewer service the original Central Basin Plan. Alternatively, this area can be provided sewer service by a sewer westerly to the Merle Hay Road Trunk Sewer. This low lying area adjacent to the railroad right-of-way is closer to Merle Hay Road than to the NW Beaver Drive Trunk Sewer. This area was always considered a transition area between the Central Basin and Merle Hay Road Trunk areas. Although this area is not provided sewer service as the alternative Central Basin Plan, the area can be provided sewer service by an easterly extension of Pioneer Parkway sanitary sewer.

Although the original Central Basin Plan may provide better sewer service to some portions of the Central Basin area, the alternative appears to meet the objective of sewer service availability for all of the Central Basin Area. Those areas where the alternative does not provide as deep of sewer would have the option to extend sewer southerly to Johnston Drive or westerly to Merle Hay Road.

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Enclosed is a copy of an aerial photograph showing the concept of the alternative Central Basin Plan sanitary sewer. The alternative Central Basin Plan would involve a 12-inch sewer located along the north side of NW 57<sup>th</sup> Avenue extending westerly from the NW Beaver Drive Trunk Sewer to the southwest corner of the Greedy property. The invert elevation of the sewer at the west end of the Greedy property would be approximately Elevation 817 to 818.

The sewer could be extended northerly along the west boundary of the Greedy property to serve the Polich property. This sewer can extend westerly to serve the southern part of the Jerry's Homes property. The invert of the sewer would be slightly lower than the request to serve the area directly east along the south boundary of the Polich property.

Ground elevations from south of NW 57<sup>th</sup> Avenue are typical in the range of 834. Under the alternative plan sewer can be extended to this area and still maintain a target depth of approximately 10 feet.

The ground elevations north of NW 55<sup>th</sup> Avenue are also in the range of 834. An 8-inch sewer could be extended to this area with an invert elevation of approximately 824. The sewer would marginally meet the test of a 10-foot deep sewer. The projections of invert elevations are based on a standard 8-inch sewer at a minimum slope of 0.40%.

An alternative design for the sewer to serve the area south of NW 57<sup>th</sup> Avenue would be a 10-inch sewer at a slope of 0.28%. The alternative 10-inch sewer could lower the invert elevation of the sewer at NW 55<sup>th</sup> Avenue by up to 2 feet.

Under the alternative plan the sewer along the north side of NW 57<sup>th</sup> Avenue would be relatively deep. At NW 57<sup>th</sup> Avenue the sewer would be approximately 30 feet deep. The depth would decrease to approximately 17 feet to 18 feet at the west boundary of the Greedy property.

To provide immediate sewer service to the Polich and Jerry's Homes properties it would be necessary to extend the sewer north along the west boundary of the Greedy property. It is assumed the sewer on the Polich and Jerry's Homes properties would be constructed by the developers and coordinated with the individual development plans.

Under the alternative sewer plan for the Central Basin it would appear logical for the City to construct the sewer along the north side of NW 57<sup>th</sup> Avenue. The depth and size of the sewer would be beyond the type of sewer associated with development.

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This sewer would appear to provide a benefit to the Jerry's Homes, Polich and Greedy properties. Other properties in the Central Basin that are not in a position to develop at this time would benefit from the sewer. It would appear the cost for the sewer on NW 57<sup>th</sup> Avenue should be allocated between the three development parcels and the City of Johnston. The City of Johnston would establish a connection fee district to recover its share of the cost as other properties in the area connect to the sewer.

The sewer along the west boundary of the Greedy property would normally be constructed by the developer. From a timing perspective it may be necessary for the City to consider constructing the sewer in order to provide sewer access to the Polich and Jerry's Homes property. If the City were to construct this reach of sewer for expediency purposes, it would appear the cost of the sewer should be primarily borne by the Greedy property, with some cost allocation possible to both the Polich and Jerry's Homes properties.

The purpose of this letter is to outline the concept of the alternative sewer to serve the Central Basin Plan. It would appear the next step in the process may be to request City Council review of the alternative plan. If there is support from the City Council the follow up step would appear to be discussions between the City and the three properties north of NW 57<sup>th</sup> Avenue that are considered development property. These discussions would be intended to lead to a timing and cost allocation for the project along NW 57<sup>th</sup> Avenue, and to determine how the sewer extending north across the west part of the Greedy property would be constructed.

If you have any questions or comments concerning the project, please contact us at 225-8000.

VEENSTRA & KIMM, INC.



H. R. Veenstra Jr.

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Enclosure