

**CITY COMMISSION AGENDA MEMO**  
**April 30, 2008**

**FROM:** Steve Zilkie, AICP, Senior Planner

**MEETING:** May 6, 2008

**SUBJECT:** First Reading of Ordinances Annexing and Rezoning  
the Proposed Northwing Addition

**PRESENTER:** Eric Cattell, AICP, Assistant Director for Planning

**BACKGROUND**

Frey Property Development Corporation has requested annexation of an approximate 106-acre tract of land for the proposed Northwing Addition, generally located approximately 1,400 feet east of the Marlatt Avenue and Tuttle Creek Boulevard intersection, along the north side of Marlatt Avenue, and approximately 430 feet west of Nelson's Landing Street.

The site is currently zoned County G-1, General Agricultural District, and is proposed to be rezoned to R-1, Single-Family Residential District (*see location map showing proposed zoning*). The applicant submitted a Preliminary Plat of the site, which indicates the development may consist of up to 286 single-family lots and eight (8) common area tracts.

Two access points on to Marlatt Avenue are proposed for the subdivision. There is approximately 1,060 feet between the two access points (Northwing Drive and Matter Drive), which provides adequate sight distance. Left and right turning lane will be provided at each of these access points for turning movements onto Marlatt Avenue. A third access point is provided at the northwest corner of the tract, which connects to the existing Valleywood Drive in the Valleywood Subdivision. However, County officials raised concerns that the vehicular traffic generated by the Northwing Development would degrade the level of service of the local, residential streets built to County standards within Valleywood. In response to these concerns, and after discussion with County and City officials and emergency personnel, the applicant has proposed to construct a collapsible bollard in the center of Valleywood Drive at the property line. This collapsible bollard will prevent Northwing Addition residents from driving through Valleywood, while still providing access to emergency vehicles in case of a fire, or other emergency. The Preliminary Plat also provides three (3) future access points to the adjoining property to the north.

The applicant dedicated forty (40) feet of road right-of-way to the City of Manhattan for future expansion of Marlatt Avenue. The intent of the extra forty (40) feet of road right-of-way and the future roadway expansion on Marlatt Avenue is to provide for five lanes and sidewalks on both sides of this arterial corridor.

## **ANNEXATION**

When considering an annexation request, the Manhattan Urban Area Planning Board makes a recommendation to the City Commission based on the Comprehensive Plan, Growth Vision, and the Capital Improvements Program.

**Manhattan Urban Area Comprehensive Plan.** The Future Land Use Map of the Comprehensive Plan designates the approximate east half of the site and a small portion of the northwestern corner of the site, for Residential Low - Medium (RLM) density development and the west half for Residential Medium-High (RMH) density development.

RLM policies include:

### **RLM 1: Characteristics**

*The Residential Low/Medium Density designation incorporates a range of single-family, single-family attached, duplex, and town homes, and in appropriate cases include complementary neighborhood-scale supporting land uses, such as retail, service commercial, and office uses in a planned neighborhood setting, provided they conform with the policies on Neighborhood Commercial Centers. Small-scale multiple-family buildings and condominiums may be permissible as part of a planned unit development, or special mixed-use district, provided open space requirements are adequate to stay within desired densities.*

### **RLM 2: Appropriate Density Range**

*Densities in the Residential Low/Medium designation range between less than one dwelling unit/acre up to 11 dwelling units per net acre.*

### **RLM 3: Location**

*Residential Low/Medium Density neighborhoods typically should be located where they have convenient access and are within walking distance to community facilities and services that will be needed by residents of the neighborhood, including schools, shopping areas, and other community facilities. Where topographically feasible, neighborhoods should be bounded by major streets (arterials and/or collectors) with a direct connection to work, shopping and leisure activities.*

### **RLM 4: Variety of Housing Styles**

*To avoid monotonous streetscapes, the incorporation of a variety of housing models and sizes is strongly encouraged in all new development.*

The RMH policies include:

**RMH 1: Characteristics**

*The Residential Medium/High Density designation shall incorporate a mix of housing types in a neighborhood setting in combination with compatible non-residential land uses, such as retail, service commercial, and office uses, developed at a neighborhood scale that is in harmony with the area's residential characteristics and in conformance with the policies for Neighborhood Commercial Centers. Appropriate housing types may include a combination of small lot single-family, duplexes, townhomes, or fourplexes on individual lots. However, under a planned unit development concept, or when subject to design and site plan standards (design review process), larger apartment or condominium buildings may be permissible as well, provided the density range is complied with.*

**RMH 2: Appropriate Density Range**

*Densities within a Residential Medium/High neighborhood range from 11 to 19 dwelling units per net acre.*

**RMH 3: Location**

*Residential Medium/High Density neighborhoods should be located close to arterial streets and be bounded by collector streets where possible, with a direct connection to work, shopping, and leisure activities.*

**RMH 4: Variety of Housing Styles**

*To avoid monotonous streetscapes, the incorporation of a variety of housing models and sizes is strongly encouraged.*

Based on a note on the Preliminary Plat, the proposed net density of the development will be 2.7 dwelling units per net acre. The RLM and RMH policies indicate that single-family dwellings are acceptable uses. The proposed annexation of the Northwing Addition is in general conformance to the Comprehensive Plan.

The site is within the Urban Service Area and can be served by public improvements, including street, water, fire service, and sanitary sewer.

**REZONING**

The site is on the north east edge of the City limits located in an area with a mixture of residential uses and agricultural land. To the south and west of the site are predominately residential uses with a manufactured home park (Colonial Gardens) and multi-family dwellings (Tuttle Creek Residences) and Valleywood neighborhood to the west. To the south are Marlatt Avenue, the Marlatt drainage ditch, and the Eisenhower Middle School and Baseball Complex. Farther to the south and southeast that area consists of single-family, two-family and multi-family dwellings in the Brookfield, Northview and Prairie Lakes developments. The area to the north and east of the site is predominately row crop

agriculture land. The Nelson's Landing neighborhood, a low density, residential development in Riley County, is located to the east.

Additional light, noise, and traffic can be expected as a result of the rezoning and developing agricultural land, however it is not anticipated that it will adversely impact neighboring properties. The proposed R-1 District adjoins existing R-1 District areas to the south of Marlatt Avenue. There are also similar residential uses outside of the City limits in the Valleywood Subdivision, which adjoins the northwest edge of the proposed subdivision. To address concern about traffic impacts on Valleywood Drive from the proposed subdivision, collapsible bollards are proposed to be installed in the center of Valleywood Drive at the property line to prevent traffic from entering the Valleywood neighborhood, while still providing emergency access between the two neighborhoods.

As part of the Preliminary Plat process, the applicant's engineers submitted a Traffic Impact Study and an extensive Drainage Study, which have been reviewed and accepted by the City Engineer (*see attached memorandum from City Engineer and Traffic and drainage Studies*).

For the full analysis of the proposed annexation and rezoning, see the attached Staff Memorandum and Staff Report.

## **DISCUSSION**

On April 21, 2008, the Manhattan Urban Area Planning Board held the public hearing and considered the proposed annexation and rezoning. The applicant and applicant's representatives spoke, as well as several citizens. (*See draft Minutes of the April 21, 2008, meeting.*)

Following discussion, the Planning Board, on a vote of 5-0, recommended approval of the 106-acre tract of land for Northwing Addition, generally located north of Marlatt Avenue, based on the findings in the Staff Report and conformance with the Manhattan Urban Area Comprehensive Plan.

The Planning Board on a vote of 5-0, recommended approval of the proposed rezoning of Northwing Addition from County G-1, General Agricultural District, to R-1, Single-Family Residential District, based on the findings in the Staff Report.

The Planning also approved the Preliminary Plat of Northwing Addition on a vote of 5-0, with three conditions (*see draft Minutes of the April 21, 2008, meeting*).

## **FINANCING**

Not applicable.

## **ALTERNATIVES**

It appears the Commission has the following alternatives concerning the issue at hand. The Commission may:

1. Approve first reading of an ordinance annexing the approximate 106-acre site for the proposed Northwing Addition, based on conformance with the Comprehensive Plan, the Growth Vision, and the Capital Improvements Program as recommended by the Manhattan Urban Area Planning Board; and,  
  
Approve first reading of an ordinance rezoning the site to R-1, Single-Family Residential District, based on the findings in the Staff Report, as recommended by the Manhattan Urban Area Planning Board.
2. Deny first reading of an ordinance annexing the site, based on specifically stated reasons; and, override the Manhattan Urban Area Planning Board's recommendation on the rezoning by a two-thirds majority vote of the membership of the City Commission and deny first reading of an ordinance rezoning the site, based on specifically stated reasons. (*Note: To override the Planning Board's recommendation a minimum of four votes are necessary.*)
3. Return the recommendations of the Planning Board for further consideration, together with a statement specifying the basis for the City Commission's failure to approve or disapprove the annexation and rezoning, and provide further direction to the Planning Board.
4. Table first reading of ordinances annexing and rezoning the site, for specifically stated reasons and provide further direction to City Administration.

## **RECOMMENDATIONS**

City Administration recommends that the City Commission approve first reading of an ordinance annexing the approximate 106-acre site for the proposed Northwing Addition, based on conformance with the Manhattan Urban Area Comprehensive Plan, the Growth Vision, and the Capital Improvements Program and the recommendation of the Planning Board.

City Administration also recommends that the City Commission approve first reading of an ordinance rezoning the proposed Northwing Addition, from County G-1, General Agricultural District, to R-1, Single-Family Residential District, based on the findings in the Staff Report and the recommendation of the Planning Board.

## **POSSIBLE MOTIONS**

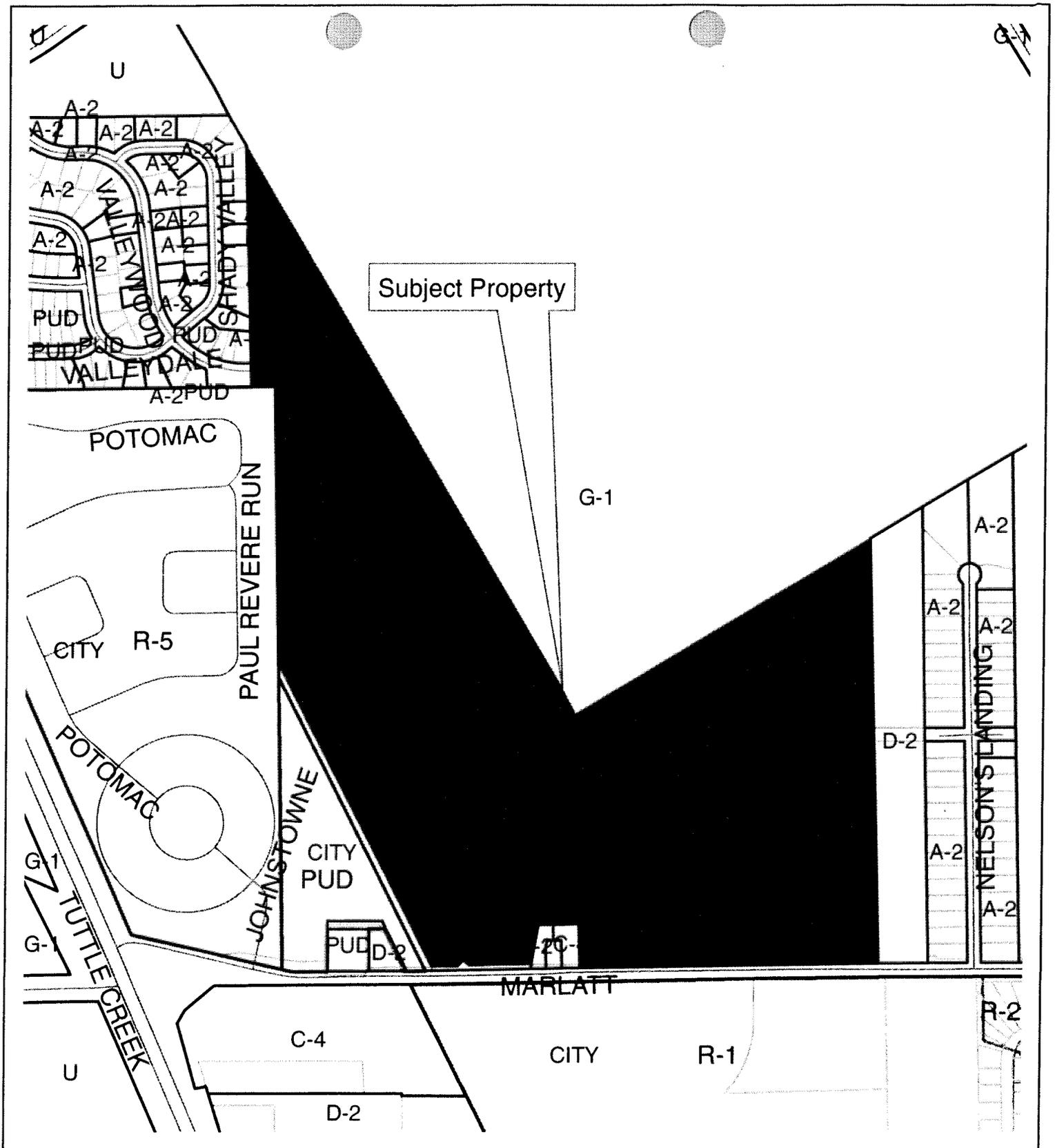
Approve first reading of an ordinance annexing a 106-acre tract of land for the proposed Northwing Addition, generally located 1,400 feet east of the Marlatt Avenue and Tuttle Creek Boulevard intersection along the north side of Marlatt Avenue, based on conformance with the Comprehensive Plan, the Growth Vision, and the Capital Improvements Program; and,

Approve first reading of an ordinance rezoning the site from County G-1, General Agricultural District, to R-1, Single-Family Residential District, based on the findings in the Staff Report.

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08051}CC}1stRdgAnnexRezoneNorthwingG1toR1

### Enclosures:

1. Location map
2. Staff Memorandum on Annexation
3. Aerial photo showing annexation/rezoning site
4. Future Land Use Map – Comprehensive Plan
5. Staff Report on R-1 District rezoning
6. Memorandum from Rob Ott, City Engineer, dated April 11, 2008
7. Preliminary Plat showing site layout
8. Letter from Doug Anders dated December 29, 2007, with legal description requesting annexation
9. Written rezoning application document from applicant and applicant's letter to surrounding owners
10. Preliminary Drainage Study by Schwab-Eaton, dated April 11, 2008
11. Traffic Impact Study by Schwab-Eaton, dated April 15, 2008
12. Text of the R-1 District
13. Draft Minutes: April 21, 2008, Planning Board meeting
14. Project Chronology



General Location Map  
 Request to Annex, Rezone and  
 Preliminary Plat  
 Northwing Addition





# INTER-OFFICE MEMORANDUM

**DATE:** April 1, 2008  
**MEETING:** April 21, 2008  
**TO:** Manhattan Urban Area Planning Board  
**FROM:** Chad Bunger, Planner  
**RE:** Annexation of Northwing Addition

## **BACKGROUND**

Frey Property Development Corporation has requested annexation of an approximate 106-acre tract of land for the proposed Northwing Addition, which is generally located approximately 1,400 feet east of the Marlatt Avenue and Tuttle Creek Boulevard intersection. The tract is along the north side of Marlatt Avenue, along the east side of Tuttle Creek Residence subdivision, Colonial Gardens Trailer Court and Valleywood subdivision, south of Star Farms, and approximately 430 feet west of Nelson's Landing Street.

The applicant has submitted concurrent applications to rezone the 106-acre tract from County G-1, General Agriculture District, to R-1, Single-Family Residential District, and to Preliminary Plat the subdivision. The proposed Preliminary Plat will create 286 single-family lots and eight (8) common tracts. Access to the subdivision will be from Marlatt Avenue and Valleywood Drive in the Valleywood Subdivision in Riley County.

When considering an annexation request, the Manhattan Urban Area Planning Board shall make a recommendation on the proposed annexation based on the Comprehensive Plan for the Manhattan Urban Area, the Growth Vision, and the Capital Improvements Program (CIP).

## **FUTURE LAND USE MAP OF THE COMPREHENSIVE PLAN**

The Future Land Use Map of the Northeast Planning Area shows the approximate east half and a small area in the northwestern corner of the tract as Residential Low Medium (RLM) and the west half as Residential Medium High (RMH).

RLM policies include:

**RLM 1: Characteristics**

*The Residential Low/Medium Density designation incorporates a range of single-family, single-family attached, duplex, and town homes, and in appropriate cases include complementary neighborhood-scale supporting land uses, such as retail, service commercial, and office uses in a planned neighborhood setting, provided they conform with the policies on Neighborhood Commercial Centers. Small-scale multiple-family buildings and condominiums may be permissible as part of a planned unit development, or special mixed-use district, provided open space requirements are adequate to stay within desired densities.*

**RLM 2: Appropriate Density Range**

*Densities in the Residential Low/Medium designation range between less than one dwelling unit/acre up to 11 dwelling units per net acre.*

**RLM 3: Location**

*Residential Low/Medium Density neighborhoods typically should be located where they have convenient access and are within walking distance to community facilities and services that will be needed by residents of the neighborhood, including schools, shopping areas, and other community facilities. Where topographically feasible, neighborhoods should be bounded by major streets (arterials and/or collectors) with a direct connection to work, shopping and leisure activities.*

**RLM 4: Variety of Housing Styles**

*To avoid monotonous streetscapes, the incorporation of a variety of housing models and sizes is strongly encouraged in all new development.*

The RMH policies include:

**RMH 1: Characteristics**

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**RMH 2: Appropriate Density Range**

*Densities within a Residential Medium/High neighborhood range from 11 to 19 dwelling units per net acre.*

**RMH 3: Location**

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**RMH 4: Variety of Housing Styles**

*To avoid monotonous streetscapes, the incorporation of a variety of housing models and sizes is strongly encouraged.*

Based on a note on the Preliminary Plat, the proposed R-1 District net density is 2.7 dwelling units per net acre. The RLM and RMH policies indicate that single-family dwellings are acceptable uses. The proposed annexation of the Northwing Addition is in general conformance to the Comprehensive Plan.

**GROWTH VISION**

The proposed annexation conforms to the policy directions provided by the Manhattan Urban Area Growth Vision, adopted in 2003 in the Comprehensive Plan. The site is in a growth corridor. The Growth Vision reflects the values of the community and its vision for annexation, growth and development. The Growth Vision includes a community purpose statement that recommends the incorporation into the City of those areas that are physically, socially, and economically a part of the City. Further, the Growth Vision encourages orderly, contiguous growth and expansion into areas that can be serviced with City services.

**CAPITAL IMPROVEMENTS PROGRAM**

The site is within the Urban Service Area and can be served by public improvements, including street, water, fire service and sanitary sewer. Marlatt Avenue is currently being improved by a road construction project by Riley County. An improvement project for Casement Road has been submitted for the 2009 Capital Improvement Program.

## **ALTERNATIVES**

It appears the MUAPB has the following alternatives concerning the issue at hand. The Board may:

1. Recommend approval of the annexation of Northwing Addition, based on conformance with the Future Land Use Map of the Comprehensive Plan for the Manhattan Urban Area and the City of Manhattan, Kansas, the Growth Vision, and the Capital Improvements Program (CIP).
2. Recommend denial of the annexation of Northwing Addition, for specifically stated reasons.
3. Table the annexation of Northwing Addition to a specific date, indicating the reasons for tabling.

## **RECOMMENDATION**

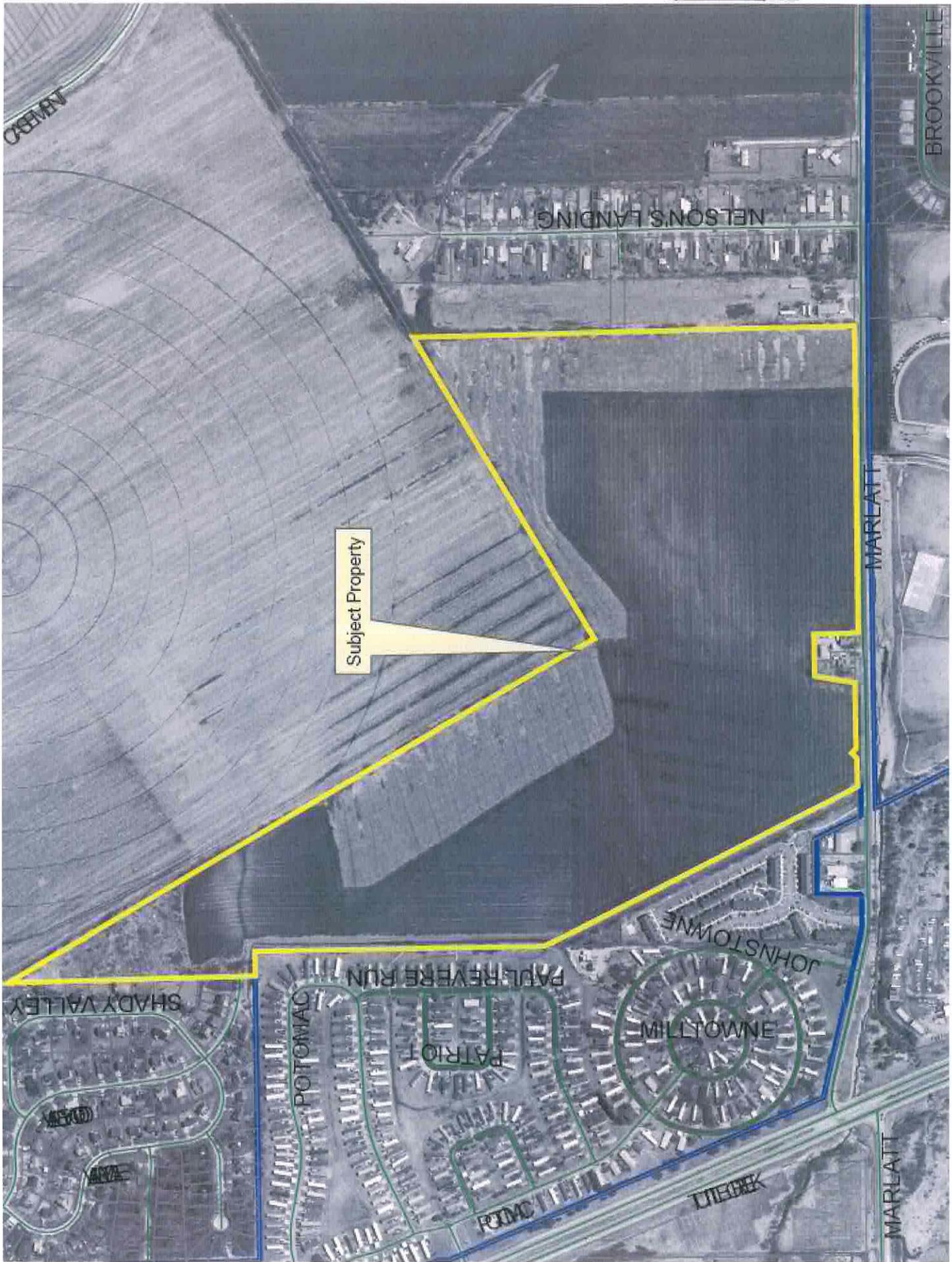
City Administration recommends approval of the annexation of Northwing Addition, based on conformance with the Future Land Use Map of the Comprehensive Plan for the Manhattan Urban Area and the City of Manhattan, Kansas, the Growth Vision, and the Capital Improvements Program (CIP).

## **POSSIBLE MOTION**

The Manhattan Urban Area Planning Board recommends approval of the annexation of Northwing Addition, based on conformance with the Future Land Use Map of the Comprehensive Plan for the Manhattan Urban Area and the City of Manhattan, Kansas, the Growth Vision, and the Capital Improvements Program (CIP).

04142

NORTH



Subject Property

MILLTOWNE

PATRIOT

POTOMAC

PAUL REVERE RUN

JOHNSTOWNE

MARLATT

BROOKVILLE

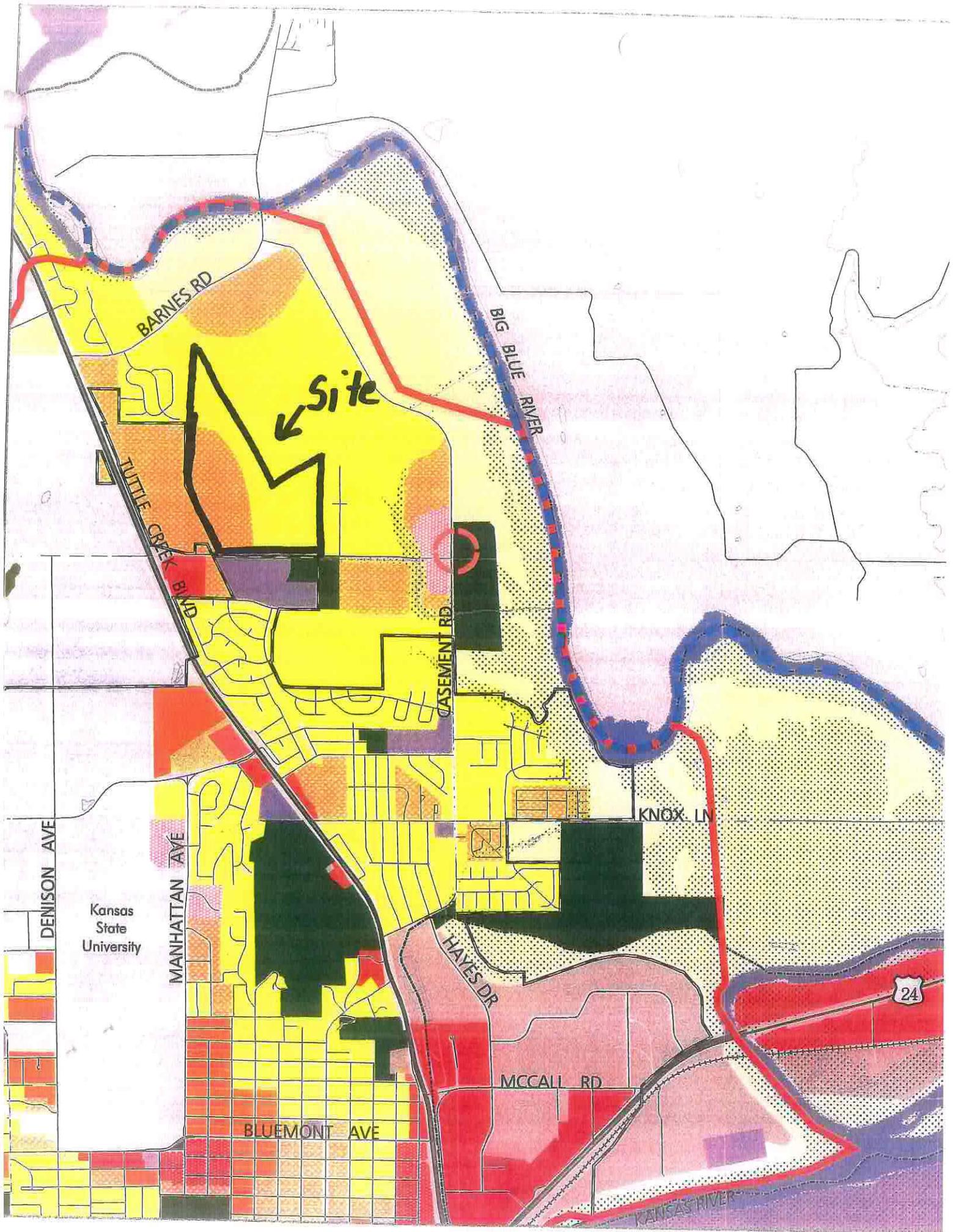
NELSON'S LANDING

SHADY VALLEY

CASHMAN

LITBEEK

MARLATT



BARNES RD

Site

BIG BLUE RIVER

TUTTLE CREEK BLVD

CASEMENT RD

KNOX LN

DENISON AVE

Kansas State University

MANHATTAN AVE

HAYES DR

24

MCCALL RD

BLUEMONT AVE

KANSAS RIVER

## STAFF REPORT

### ON AN APPLICATION TO REZONE PROPERTY

**FROM:** County G-1, General Agricultural District.

**TO:** R-1, Single-Family Residential District.

**APPLICANT:** Frey Property Development Corporation

**ADDRESS:** 219 Wava Avenue, Niceville, FL 32578

**OWNERS:** Anders Trust, Isaac W. Anders and Janet J. Anders

**ADDRESS:** 14 Roadrunner Trail, Placitas, NM 87043

**LOCATION:** generally located approximately 1,400 feet east of the Marlatt Avenue and Tuttle Creek Boulevard intersection. The tract is along the north side of Marlatt Avenue, along the east side of Tuttle Creek Residence subdivision, Colonial Gardens Trailer Court and Valleywood subdivision, south of Star Farms, and approximately 430 feet west of Nelson's Landing Street.

**AREA:** approximately 106 acres

**DATE OF PUBLIC NOTICE PUBLICATION:** April 1, 2008

**DATE OF PUBLIC HEARING: PLANNING BOARD:** April 21, 2008

**CITY COMMISSION:** May 6, 2008

**EXISTING USE:** Row crop, agricultural land

**PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS:** The site is generally flat, row crop land. The site drains in three directions using shallow swales that ultimately drain in to the Marlatt Ditch. The western edge of the site drains to a swale along the western property line, the southeast portion of the site drains directly into the Marlatt Ditch, and the northeast portion drains into a channel that runs along the common boundary of the property to the north (Star Farms).

### **SURROUNDING LAND USE AND ZONING:**

(1) **NORTH:** Row crop agricultural land; G-1, General Agricultural District.

(2) **SOUTH:** Two (2) residential dwellings and outbuildings used for service commercial business, Marlatt Avenue (2-lane, rural arterial), Marlatt drainage ditch, Eisenhower Middle

School, Eisenhower Baseball Complex, single-family, two-family, and multi-family residential dwellings; County A-2, Single-Family Residential, County G-1, General Agriculture District, County C-4, Highway Business District, R-1, Single-Family Residential District, R-2, Two-Family Residential District, R-3, Multi-Family Residential District and Residential PUD.

(3) **EAST:** Vacant industrial land, single-family dwellings and vacant agricultural land; County D-2, Light Industrial District, A-2, Single-Family Residential District, and G-1, General Agriculture District.

(4) **WEST:** Industrial use, multi-family residential dwellings, manufactured home park and single-family dwellings; County D-2, Light Industrial District, City Residential PUD, R-5, Manufactured Home Park, County A-2, Single-Family Residential District, County B-1, Two-Family Residential District and County Residential PUD.

**GENERAL NEIGHBORHOOD CHARACTER:** The site is on the north east edge of the City limits located in an area with a mix of residential uses and agricultural land. To the south and west of the site are predominately residential uses with a manufactured home park (Colonial Gardens trailer court) and multi-family dwellings (Tuttle Creek Residence) to the west and single-family, two-family and multi-family dwellings to the south in the Brookfield, Northview and Prairie Lakes developments. The Eisenhower Middle School and Eisenhower Baseball Complex are also located to the south. The area to the north and east of the site is predominately vacant, row crop agriculture land. The Nelson's Landing neighborhood, a low density, residential development in Riley County, is located to the east.

**SUITABILITY OF SITE FOR USES UNDER CURRENT ZONING:** The site is suitable for permitted uses of the County G-1 District,

**COMPATIBILITY OF PROPOSED DISTRICT WITH NEARBY PROPERTIES AND EXTENT TO WHICH IT MAY HAVE DETRIMENTAL AFFECTS:**

Additional light, noise, and traffic can be expected as a result of the rezoning, but should not adversely impact neighboring properties. The proposed R-1 District adjoins existing R-1 District areas to the south of Marlatt Avenue. There are also similar residential uses outside of the City limits in the Valleywood Subdivision, which is adjacent to the proposed subdivision. Concerns were raised that an adverse impact would be created by the increase in traffic along Valleywood Drive from the proposed subdivision into the established neighborhood of Valleywood. Collapsible bollards are proposed to be installed in the center of Valleywood Drive at the property line to prevent traffic from entering the Valleywood neighborhood and still provide emergency access.

**CONFORMANCE WITH COMPREHENSIVE PLAN:**

The Future Land Use Map of the Northeast Planning Area shows the approximate east half and a small area in the northwestern corner of the tract as Residential Low Medium (RLM) and the west half as Residential Medium High (RMH).

RLM policies include:

**RLM 1: Characteristics**

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Based on a note on the Preliminary Plat, the proposed R-1 District net density is 2.7 dwelling units per net acre. The RLM and RMH policies indicate that single-family dwellings are acceptable uses. The proposed rezoning of the Northwing Addition is in general conformance to the Comprehensive Plan.

**ZONING HISTORY AND LENGTH OF TIME VACANT AS ZONED:** The site has remained vacant and zoned County G-1 for approximately 30 years.

#### **CONSISTENCY WITH INTENT AND PURPOSE OF THE ZONING ORDINANCE:**

The intent and purpose of the Zoning Regulations is to protect the public health, safety, and general welfare; regulate the use of land and buildings within zoning districts to assure compatibility; and to protect property values. The R-1, Single-Family Residential District is designed to provide a single-family dwelling zone at a density no greater than one dwelling unit per 6,500 square feet. Lots in the proposed Northwing Addition range from 7,998 square feet in area to 26,582 square feet in area. All lots exceed minimum lot size requirements of the R-1 District.

**RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE THAT DENIAL OF THE REQUEST WOULD ACCOMPLISH, COMPARED WITH THE HARDSHIP IMPOSED UPON THE APPLICANT:** There appears to be no gain to the public that denial would accomplish compared to the hardship to the public.

**ADEQUACY OF PUBLIC FACILITIES AND SERVICES:** Adequate public streets, sanitary sewer, storm sewer, and water are available to serve the site.

**OTHER APPLICABLE FACTORS:** A Preliminary Plat was submitted by the applicant, which will be considered at the April 21, 2008 Manhattan Urban Area Planning Board meeting.

#### **STAFF COMMENTS:**

City Administration recommends approval of the proposed rezoning of Northwing Addition from County G-1, General Agriculture, to R-1, Single-Family Residential District.

#### **ALTERNATIVES:**

1. Recommend approval of the proposed rezoning of Northwing Addition from County G-1, General Agriculture, to R-1, Single-Family Residential District, stating the basis for such recommendation.
2. Recommend denial of the proposed rezoning, stating the specific reasons for denial.

3. Table the proposed rezoning to a specific date, for specifically stated reasons.

**POSSIBLE MOTION:**

The Manhattan Urban Area Planning Board recommends approval of the proposed rezoning of Northwing Addition from County G-1, General Agriculture, to R-1, Single-Family Residential District, based on the findings in the Staff Report.

**PREPARED BY:** Chad Bungler, Planner

**DATE:** April 4, 2008

CB/vr  
08025



## INTER-OFFICE MEMORANDUM

DATE: April 11, 2008

TO: Steve Zilkie, AICP, Senior Planner

FROM: Robert K. Ott, P.E., City Engineer

RE: Northwing Addition – Stormwater & Transportation

### **Transportation Network**

*Capacity Analysis:* The developer's consultant prepared a preliminary traffic report that indicates impacts to the surrounding transportation network related to the development. The proposed development will increase the average daily traffic count by 1936 trips per day on Marlatt Avenue. However the overall level of service along Marlatt Avenue will continue to be adequate with the current two lane facility and meet the Manhattan Area Transportation Strategy criteria as set forth and adopt by the City Commission.

Public Works Administration has request that an additional 40 feet of right-of-way be dedicated to the City of Manhattan for future expansion of Marlatt Avenue to accommodate a five lane roadway segment with sidewalks on both sides. The current project under way by Riley County will construct a two lane roadway with a sidewalk along the entire south side of Marlatt Avenue.

Public Works Administration concurs with a three lane wide roadway on the north leg of the two intersections of Northwing Drive and Matter Place Drive of Marlatt Avenue.

Public Works Administration has expressed concern with the multiple horizontal curves of the roadway and having permitting parking on both sides of the roadway. Traditional 31 foot back to back streets have been allowed to have parking on both sides. City Engineer reserves the authority to limit parking to one side should problems be brought forth by future home owners and motorists. Schwab-Eaton did provide an auto-turn analysis that demonstrated that the curves can be negotiated by emergency vehicles.

#### Active and Future Transportation Projects:

1. US-24 & Marlatt Intersection improvements will begin in the winter of 2008. Funding from KDOT and the Federal Government has been secured to offset the cost of this significant project.
2. Casement Road is up for consideration in the 2009 Capital Improvements Program which will be taken under consideration by the City Commission starting in May of 2008. At this time Federal and State Grants have not been received nor awarded.

City Administration accepts the transportation impact study report with no exceptions as provided to us by Schwab Eaton – Engineers Surveyors, PA. on January 11, 2008 which was professionally sealed and sign by Licensed Engineer in the State of Kansas.

### **Stormwater Drainage Analysis**

***Storm Drainage Report:*** The developer’s consultant prepared a drainage analysis of the proposed development that predicts minimum impact to the upstream and downstream drainage structures. City Administration accepts the stromwater drainage impact study without exception to the report that was provided to the City of Manhattan by Schwab Eaton – Engineers Surveyors, PA on March 14, 2008 which was professionally sealed and sign by Licensed Engineer in the State of Kansas.

### ***Storm Drainage Discussion Points:***

This development will construct a series of drainage basins and dry ponds that will detain the water to minimize the discharge rates. Schwab-Eaton has provided analysis that demonstrates that discharge rates can be reduced to be less for the developed condition then the current conditions.

The site plan recommends three major discharge points:

1. North East – Stormwater will traverse east towards Casement Road and then to Big Blue River. The post condition is reduced by (-28 cfs, -73 cfs, -79 cfs) (2yr, 10yr, 100 yr storm events)
2. South East - Stormwater will traverse south into Marlatt Ditch and then into the Big Blue River ( +8 cfs, -11 cfs, -43 cfs) (2yr, 10yr, 100 yr storm events)
3. South West – Stormwater will traverse south into Marlatt Ditch and then into the Big Blue River (-0 cfs,-1 cfs, -0 cfs) (2yr, 10yr, 100 yr storm events)

The minor increase in discharge rates have been reviewed by the City’s Consultant for the Marlatt Drainage Ditch Project and those flows will be added into the analysis and compensated for in our design for this project.



# APPLICATION

29 December, 2007

Manhattan City Commission  
1101 Poyntz Avenue  
City Hall  
Manhattan, Kansas 66502

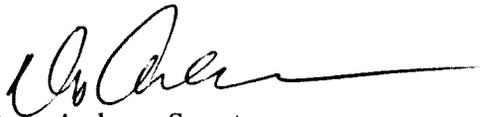
Dear Honorable Mayor and Commissioners,

We respectfully request that the City of Manhattan annex a 106.05-acre tract of land north of East Marlatt Avenue into her corporate limits. Subject tract of land is located in Section 31, Township 9 South, Range 8 East of the 6<sup>th</sup> Principal Meridian in Riley County. A metes and bounds description is attached.

A request for rezoning of the land from county agriculture to city single residential district will follow.

We would appreciate your favorable vote on this request.

Sincerely,



Doug Anders – Secretary  
Frey Property Development Corporation

APPLICATION

**NORTHWING SUBDIVISION  
LEGAL DESCRIPTION**

A tract of land in Lot 11 and Lot 12, Section 31, Township 9 South, Range 8 East of the 6<sup>th</sup> Principal Meridian, Riley County, Kansas, more particularly described as follows:

Commencing at the Southwest corner of said Lot 12, Section 31, thence S 89°55'23" E (assumed bearing) along the South line of said Lot 12, a distance of 668.06 feet; thence N 26°01'17" W along the Easterly line of the "ARC Communities 3, LLC" Tract as described on Pages 515 to 517 in Book 802 at the Riley County Register of Deeds Office, a distance of 75.23 feet a point on the North right of way line of Marlatt Avenue, said point being the true point of beginning;

THENCE N 26°01'17" W along the Easterly line of said ARC Communities 3, LLC Tract, a distance of 1454.59 feet to a point on the West line of said Lot 12;

THENCE N 00°07'56" W along the West line of said Lot 12, a distance of 1284.98 feet to the Northeast corner of said Lot 12;

THENCE N 89°50'35" W a distance of 103.30 feet to the Southeast corner of Valleywood Subdivision, an addition in Riley County, Kansas;

THENCE N 01°11'29" W along the East line of said Valleywood Subdivision, a distance of 1067.56 feet to a point on the Southwesterly line of the Wyandotte Reserve No. 3;

THENCE S 29°36'14" E along the said Southwesterly line of the Wyandotte Reserve No. 3, a distance of 2944.77 feet said point being the Northwest Corner of said Lot 11, Section 31;

THENCE N 59°48'30" E along the Southeasterly line of said Wyandotte Reserve No. 3 a distance of 1512.37 feet to the Northwest corner of a tract of land deeded to Melvin Van Der Stelt as described on Page 658 in Book 811 at the Riley County Register of Deeds Office;

THENCE S 00°42'37" E along the West line of the said Melvin Van Der Stelt tract for a distance of 1826.01 feet to a point on the Northerly right of way line of Marlatt Avenue, said point being N 00°42'37" W a distance of 104.34 feet from the Southeast corner of said Lot 11;

THENCE S 65°31'16" W along the Northerly right of way line of Marlatt Avenue, a distance of 98.54 feet;

THENCE N 89°23'27" W continuing along said Northerly right of way of Marlatt Avenue for a distance of 1163.32 feet;

THENCE along a curve to the left having a radius of 12662.88 feet and an arc length of 74.87 feet, subtended by a chord of N 89°33'37" W for a distance of 74.87 feet to a point on the East line of Drumm Addition, an addition in Riley County, Kansas;

THENCE N 00°06'26" W along the East line of said Drumm Addition for a distance of 170.91 feet to the Northeast corner of said Drumm Addition;

THENCE S 89°53'34" W along the North line of said Drumm Addition for a distance of 181.02 feet to the Northwest corner of said Drumm Addition;

THENCE S 11°04'58" W along the West line of said Drumm Addition for a distance of 175.41 feet to a point on the Northerly right of way of Marlatt Avenue;

THENCE S 89°22'39" W along the said Northerly line of Marlatt Avenue for a distance of 288.15 feet;

THENCE N 44°58'54" W along the Northerly right of way line of Marlatt Avenue for a distance of 28.63 feet;

THENCE S 43°28'28" W along the Northerly right of way of Marlatt Avenue for a distance of 28.66 feet;

THENCE S 89°38'16" W along the Northerly right of way of Marlatt Avenue for a distance of 147.02 feet to the point of beginning. Said contains 106.05 acres, more or less.

Subject to easements, reservations, restrictions and rights of way of record.

END DESCRIPTION

**NORTHWING ADDITION  
MANHATTAN, KANSAS  
ZONING**

**APPLICATION**

7 January, 2008

6. Provide a written response to the matters the Planning Board and City Commission consider when making a decision to rezone the property. Those matters include the following:

- (a) Proposed zoning district and land uses to be established;

The zoning requested is "R-1" Single Family Residential. The land use will be for single-family homes often characterized as "Affordable" with price structure between \$120,000 and \$180,000 in today's market.

- (b) The existing use of the property;

The property is farmed with alternating row crops.

- (c) The physical and environmental characteristics of the property;

The terrain of the property is relatively flat with very little timber and well above the 100 year flood elevations.

- (d) The zoning and land uses of nearby properties;

There is a two-lot, single family subdivision called Drum Addition along the north side of Marlatt Ave. Eisenhower Middle School falls along the south line of the proposed Northwing Addition (opposite side of Marlatt Avenue). Tuttle Creek Residences Apartments and the Colonial Gardens Mobile Home Park fall along the west property line. To the east there exists a single family home on a long narrow tract of land. Land to the north is farmed.

- (e) The suitability of the subject property for the land uses to which it is restricted under current agricultural zoning;

Although the land is quite suitable for its existing use, residential growth around the property renders it more difficult to farm.

- (f) The character of the neighborhood;

The character of the area is a mix of residential and agricultural.

- (g) The compatibility of the proposed zoning district with nearby properties and the extent to which it may detrimentally affect those properties;

The subject tract of land is adjacent to residential districts and schools and therefore should be compatible with surrounding properties on three sides. Although farming along side of residences is not normally considered compatible, in this case some activities associated with farming operations should not present a problem since prevailing winds are from the southwest during the planting and harvest seasons.

- (h) The conformance of the requested change to the adopted Comprehensive Plan for the City of Manhattan.

The Comprehensive Plan designates subject site as "RLM" Residential Low to Medium Density. The proposed Northwing Addition conforms to the plan.

- (i) The zoning history of the property and the length of time it has remained vacant as zoned;

The land has been vacant since at least the time Riley County adopted zoning regulations in the mid 1950's.

- (j) Whether the proposed zoning would be consistent with the intent and purpose of the zoning regulations;

Yes. All zoning and platting regulations will be met or exceeded.

- (k) The relative gain to the public health, safety and welfare that denial of the proposed amendment would accomplish, compared with the hardship imposed upon the individual owner that would result from such denial;

It is becoming more and more difficult to find land to develop that is not in the flood plain, university owned, affected by the Ft. Riley Noise Hazard Zone or the Airport Overlay Zone. Subject property falls in an area tagged for growth in the comprehensive land use plan.

- (l) Whether adequate sewer and water facilities, streets and other needed public services exist, or can be provided to serve the uses that would be permitted by the proposed zoning district;

Large diameter sanitary sewer and water lines are in place along Marlatt Avenue. Marlatt Avenue is currently being re-constructed with curb, gutter and buried storm sewer. Intersection improvements to the Tuttle Creek Blvd. and Marlatt Avenue intersection is in design and Marlatt Ditch improvements are planned as well.

**APPLICATION**

APR 2008

**Northwing Addition - Neighborhood Meeting**

January 7, 2008 – 7:00 pm to 9:00 pm

**Manhattan Fire Station**

- One hundred forty-three letters and plat drawings were sent to all property owners within the 200' (city) and 1,000' (county) of the proposed Northwing Addition.
- Twenty-Eight persons were in attendance (see attached sign in sheet)
- Presentation by Kirk Hoke of Schwab-Eaton, P.A. and two of the developers; Greg and Matt Anders.
- Some residents in the Valleywood Addition expressed concern about traffic through their neighborhood from Northwing Addition. Kirk Hoke explained that the "Traffic Study" prepared by one of the Schwab-Eaton Engineers concludes that approximately the 10 - 12 lots at the north end of Northwing Addition will use the Valleywood streets but only when they are wanting to go north.
- Hoke made note that in a meeting with the Manhattan Fire Code Services some options were discussed such as "Emergency Only" signage, gravel roadbed or a gate. Other city departments would have to agree on one of these methods.
- Several persons residing at the north end of Flinthills Valley Addition expressed concerns about flooding and had photographs showing high water during May 2007 rainfall events. These storms are believed to be 100 year and 200 year events. No damage to homes was evident in the photos.
- The property owners were assured that the post development drainage situation may not solve their problems but it would not be any worse than what now exists.
- Mr. Mel. Van Der Stelt and Roger Seymour said they would like to see a street connection from Julie Lane in the Flinthills Valley Addition tie into Northwing. Mr. Hoke explained that it would not be good planning because of the industrial zoning of the Van Der Stelt property between the two residential subdivisions. The connection could be revisited prior to final platting that phase of Northwing Addition "if" the zoning of the Van Der Stelt property has been changed to commercial or residential at that time.

# APPLICATION

April 8, 2008

APR 2008

Dear Property Owner,

Approximately three months ago we held a neighborhood meeting at the Kimball Fire Station to inform you of a new residential subdivision being planned in your neighborhood. The meeting was well attended and we thank all of you who were able to make it and listen to our presentation.

We want you to know that we listened to your concerns and have spent the past 90 days working to resolve them.

The biggest concern of the residents in the Valleywood Addition was the planned connection to Valleywood Drive. We met with the City of Manhattan emergency response people and worked out a plan where the pavement will narrow and a "knock-down bollard" will be placed on the common property line. The barrier will prevent vehicular traffic from passing through both subdivisions but will allow fire trucks and ambulances to get where they need to go during an emergency.

The other major concern, mostly to folks east of our proposed Northwing Addition, was storm water management. We made a commitment at the January neighborhood meeting that, not only would we not increase the rates of storm water through your areas, we would do everything we could to reduce those rates. Our Engineers have spent hundreds of hours looking at different routes, computer models, grading plans, etc. and we are very pleased to inform you that we are going to keep that promise. A large percentage of the storm water that today flows from the northeast corner of the Anders property southeast through Nelson's Landing and the Irvine farm has been re-routed to flow under Marlatt Avenue at the southeast corner of the Anders tract. We were able to achieve this by creating approximately 15 acres of storm water detention basins throughout the subdivision. These basins are interconnected and will hold storm water for short periods of time (a few hours) after the storm ends, releasing the storm water through small diameter pipes. The basins will remain dry most of the time.

A "Homes Association" will be established to maintain the green spaces and storm water detention basins. Enclosed please find a reduced copy of the revised plat.

We sincerely believe "Northwing" will be a great addition to the neighborhood and the City of Manhattan. The design methods are new, creative and will provide a high quality of life for the residents. Please do not hesitate to call us, or our Engineer if you have further questions or concerns. Doug Anders can be reached at 1-805-758-9808 or Kirk Hoke (Schwab-Eaton, P.A.) at 785-539-4687.

Sincerely,

Greg Anders, Doug Anders and Matt Anders

Attachment

**APPLICATION**

**NORTHWING ADDITION  
Manhattan, Kansas**

**PRELIMINARY DRAINAGE STUDY**

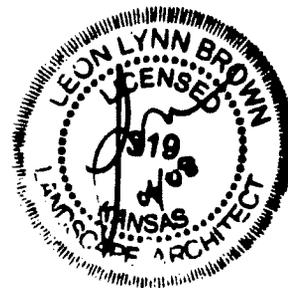
Submitted to:  
The City of Manhattan  
1101 Poyntz Avenue  
Manhattan, KS 66502

Developer:  
Anders Trust/Frey Properties Development Company

Submitted by:  
Schwab-Eaton, P.A.  
1125 Garden Way  
Manhattan, KS 66502

April 11, 2008

APR 20 2008



# **NORTHWING ADDITION PRELIMINARY DRAINAGE REPORT**

**April 11, 2008**

## **INTRODUCTION:**

Northwing Addition is a proposed residential development located on a parcel of land north of Eisenhower Middle School and east of Colonial Gardens Mobile Home Park along Marlatt Avenue on the northeast edge of Manhattan, Kansas. Two Hundred Eighty-Six Single-family residences are planned over a six to ten year construction time line. This area has been identified as a prime growth area for low to medium residential uses in the 2003 Manhattan Urban Area Comprehensive Plan. Due to the limited topographical relief, this area has its own unique set of considerations with respect to surface drainage and storm water management. Schwab-Eaton, P.A. has been assisting the developer with the planning and performed a preliminary drainage study for the site, the results of which are summarized in this report. The purpose of this study is to evaluate the rainfall runoff and determine the storm water management systems required to mitigate and minimize any adverse drainage impacts to future residents of Northwing and on downstream properties.

## **METHODOLOGY:**

Subject land is not included in the City of Manhattan "1995 Storm Water Management Master Plan" (SWMMP); however, it abuts the study area covered by the SWMMP. Although the SWMMP contains no performance information for this tract of land, the general principles and hydrological methods recognized by the SWMMP were applied to this site in the preparation of this report.

Due to the size of the overall drainage area and the prospects that some form of storm water detention may be necessary, SCS hydrograph methods developed by the Natural Resource and Conservation Service (NRCS), using the Type II 24-Hour Storm, were employed in the performance of this study. The 2-Year, 10-year and 100-Year storm recurrence intervals were considered in accordance with the SWMMP.

Bentley PondPack V. 10.0 computer software was used in storm modeling to generate and route hydrographs through proposed storm water detention facilities. Due to the limited topographic relief, it was anticipated that tailwater conditions will have an impact on the performance of various storm water detention outlet structures. PondPack V. 10.0 is capable of modeling this condition to the extent that adjacent detention basins can be treated as interconnected and forward versus reverse flows assessed.

Watershed maps and data generated by the computer modeling are attached in the Appendix.

SWMMP nomographs were used to calculate times of concentration ( $T_c$ ) for the various watersheds. NRCS Soils Surveys were referenced to obtain soil types and respective hydrological soil group

classifications (A, B, C or D). The TR-55 Manual was referenced to obtain the appropriate runoff curve number (CN) for the various land-uses respective to each soil classification.

**MARLATT DITCH TAILWATER ASSUMPTIONS:** As mentioned above, the influence of tailwater conditions will be an important consideration in the development of storm water management facilities. This will be particularly so for drainage entering the Marlatt Ditch near the southeast corner of the property. Early storm models for this study were developed assuming a free outfall condition at the ditch. However, it was recognized that the peak water surface elevations in some of the detention systems connecting to the ditch fell below the probable peak water surface within the ditch, therefore invalidating those results. Then some of the early models were reconfigured assuming a constant tailwater elevation in the ditch. The results under this scenario were considered too conservative. In an effort to find a proper balance between the two extremes of a free outfall versus a constant tailwater, a time versus elevation table was created for the Marlatt Ditch near the southeast property corner. The 10-year and 100-year hydraulic profiles shown on the recent Marlatt Avenue Improvement Plans were used as the basis for the peak water surface elevation in the ditch for those storms. The peak tailwater elevations used were 1019.5 and 1021.0 for the 10-year and 100-year storms respectively. The peak 2-year tailwater elevation was assumed to be approximately 1018.3. Since typical 24-hour storm hydrographs generally peak between 12 and 13 hours, a triangular straight line graph was used mapping the time versus elevation relationship assuming no water in the ditch at the beginning, rising to a peak at around 13 hours, and then falling off to where the ditch would be drained within 35 hours of the beginning of the storm.

### **WATERSHED DESCRIPTIONS:**

The site generally drains in three directions, all of which ultimately discharge into the Marlatt Ditch. The site has very limited topographic relief and storm drainage is currently conveyed by shallow ditches around its perimeter. An improvement project is under construction for East Marlatt Avenue and another improvement project is under design for the Marlatt Ditch. The Marlatt Ditch falls in the lower end of the Stadium Watershed as defined by the SWMMP. Most of the site has been cultivated to row crops for many years and at one time was a dairy farm. The lowest elevation of the tract is approximately seven feet (7') above the 100-year Flood Plain Elevation of the Big Blue River 1.3 miles east and 0.6 miles north of the site. Marlatt Avenue Reconstruction Plans show the 100-year flood elevations in the Marlatt Ditch at or below the existing ground elevations of the proposed Northwing Addition. Improvements to the Marlatt Ditch, planned for 2008, should further reduce the 100-year flood elevations. Family records show the property has not flooded in nearly 100 years of continuous ownership.

A small portion of the western edge of the site drains to an existing swale along the western border. This swale carries limited drainage from Colonial Gardens and pumped storm water from Valleywood Addition. It discharges into the Marlatt Ditch at the southwest corner of the Northwing development. Although Valleywood drainage is pumped into this swale, the discharge rate (through a 6-inch PVC pipe) is relatively small compared to the amount of drainage generated. Therefore, from a hydrological planning perspective, Valleywood drainage is assumed to drain to the east onto the larger watershed draining through Northwing, particularly in large storm events. The overall DRAINAGE BASIN in this report.

The southeastern portion of the Northwing site drains to the southeast. It discharges into Marlatt Ditch at the southeast corner of the site. This drainage basin is referred to as the SOUTHEAST DRAINAGE BASIN in this report.

The largest portion of the site drains to the common property line with Star Farms located at the northeast side of the site. This drainage leaves the site at its northeast corner and drains through an existing waterway through several properties, one of which is Nelson's Landing. Several off-site properties also discharge at the same location. Said off-site properties include a portion of Star Farms, a tract of KSU research ground, and the Valleywood Addition previously mentioned. The downstream properties through which the existing waterway passes are either partially undeveloped (zoned industrial), residential or agricultural (under cultivation). The waterway then enters the Marlatt Ditch approximately 1,900 feet east of the site. This drainage basin is referred to as the NORTHEAST DRAINAGE BASIN in the report.

The following is a more detailed description of the drainage basins, various watersheds within each basin, and the respective storm water runoff estimates under existing and developed conditions.

**PRE-DEVELOPMENT:** (see existing watershed map for graphic description)

**A. NORTHEAST DRAINAGE BASIN:**

Watersheds #1 (Valleywood) and #2a (KSU) combine drainage near the far north end of the site and travel south along a swale located on the common north-south property line between Northwing and Star Farms. Watershed #3 (Northwing) contributes drainage all along this same swale until it turns eastward along the common east-west property line between Star Farms. Watershed #3 continues to contribute drainage along its frontage to the east-west swale along with drainage contribution from Watershed #2b (Star Farms). When the swale leaves the site at the northeast property corner, it has accumulated flows from all four watersheds. Since all the watersheds contribute to the peak discharge at this location, a Tc was estimated for the overall Drainage Basin and applied in common to all the contributing watersheds. The Tc value is estimated at 2.2 hours (133 minutes).

**WATERSHED #1 (Valleywood):** This watershed contains 32.0 acres and consists of single-family residential land-use overlaying Hydrological Soil Group Classifications B (2.2 acres), C (13.5 acres) and D (16.3 acres). The CN values used are 75, 83 and 87 for the soil types respectively for single-family residential land-use. The composite CN value is 84. The peak discharge from this watershed is estimated at 17 cfs, 31 cfs and 50 cfs for the 2, 10 and 100-year storms respectively.

**WATERSHED #2A (KSU Research):** This watershed contains 7.9 acres and consists of agricultural (turf plots) land-use overlaying Hydrological Soil Group Classifications C (7.5 acres) and D (0.4 acres). The CN values used are 74 and 80 for the soil types respectively for this land-use. The composite CN value is 74. The peak discharge from this watershed is estimated at 2 cfs, 5 cfs and 10 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #2B (Star Farms): This watershed contains 132.1 acres and consists of agricultural (cultivated row crops) land-use overlaying Hydrological Soil Group Classifications B (3.1 acres), C (95.6 acres) and D (33.4 acres). The CN values used are 75, 82 and 85 for the soil types respectively for this land-use. The composite CN value is 83. The peak discharge from this watershed is estimated at 67 cfs, 124 cfs and 201 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3 (Northwing): This watershed contains 74.9 acres and consists of agricultural (cultivated row crops) and open space (brush) land-uses. The agricultural use overlay Hydrological Soil Group Classifications C (66.5 acres) and D (7.8 acres). The CN values used are 82 and 85 for the soil types respectively for this land-use. The open space use overlay Hydrological Soil Group Classification C (0.6 acres). The CN value used is 65 for this soil type for this land-use. The composite CN value is 82. The peak discharge from this watershed is estimated at 36 cfs, 68 cfs and 112 cfs for the 2, 10 and 100-year storms respectively.

The combined peak discharge leaving the Drainage Basin at the northeast corner of Northwing is estimated at 122 cfs, 229 cfs and 372 cfs for the 2, 10 and 100-year storms respectively.

## **B. SOUTHEAST DRAINAGE BASIN:**

The Southeast Drainage Basin includes Watersheds #4a (Northwing) and #4b, which is an off-site residential lot located at midpoint of Northwing's frontage along Marlatt Avenue. Since both watersheds contribute to the peak discharge at this location, a Tc was estimated for the overall Drainage Basin and applied in common to both watersheds. The Tc value is estimated at 0.9 hours (51 minutes).

WATERSHED #4A (Northwing): This watershed contains 27.5 acres and consists of agricultural (cultivated row crops) land-use overlaying Hydrological Soil Group Classifications C. The CN value used is 82 for this soil type for this land-use. The peak discharge from this watershed is estimated at 27 cfs, 51 cfs and 83 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #4B (Off-Site Lot): This watershed contains 0.8 acre and consists of single-family residential land-use overlaying Hydrological Soil Group Classifications C. The CN value used is 83 for this soil type for this land-use. The peak discharge from this watershed is estimated at 1 cfs, 1 cfs and 2 cfs for the 2, 10 and 100-year storms respectively.

## **C. WEST DRAINAGE BASIN:**

The West Drainage Basin will be impacted very little by the proposed Northwing development since only a small portion of the Northwing site lies within this Drainage Basin. The Northwing discharge contribution is the only portion of the West Drainage Basin that was evaluated. Although Colonial Gardens also drains to this location, no change is attributed when comparing pre-developed and post-developed conditions.

**WATERSHED #5 (Northwing):** This watershed contains 3.6 acre and consists of open space (grassy swale and fringe area) land-use overlaying Hydrological Soil Group Classifications C. The CN value used is 74 for this soil type for this land-use. The Tc is estimated at 0.6 hour (37 minutes). The peak discharge from this watershed is estimated at 2 cfs, 6 cfs and 10 cfs for the 2, 10 and 100-year storms respectively.

**POST DEVELOPMENT:** (see proposed watershed map for graphic description)

A very important objective of the overall storm water management strategy is to avoid increasing peak discharges onto downstream properties over what occurs under existing conditions. If feasible, a second objective is to actually reduce the peak discharges to be at levels below existing conditions since the area is currently experiencing various drainage problems. Several meetings were held with various surrounding landowners to discuss existing drainage problems and discuss various storm water management strategies.

A preliminary grading plan was prepared for the overall Northwing development to identify changes in proposed watershed boundaries and respective Tc values. The storm water management strategy proposed herein consists of creating a series of on-site storm water detention facilities and redirects some of the drainage from the Northeast Drainage Basin into the Southeast Drainage Basin. This strategy will potentially reduce peak discharges passing through the Nelsons Landing area. The Southeast Drainage Basin expands into the area that contributes to the Northeast Drainage Basin under existing conditions. Smaller storm events would be discharged at the southeast corner of the site. In large events, drainage will be directed to the southeast corner until detention basins fill to the extent that a portion of the discharge is then directed into the Northeast Drainage Basin, but at a rate equal to, or less than existing flows.

Part of the drainage strategy includes proposed collaboration with Star Farms. The collaboration will involve re-grading of the existing swale along both shared property lines and establishment of a drainage easement. This strategy will also improve existing drainage conditions on part of the Star Farms property. Several meetings have occurred between the Northwing developer, Schwab-Eaton, and a Star Farms representative regarding this prospect, which appears favorable.

**A. NORTHEAST DRAINAGE BASIN:**

Under proposed conditions, Watersheds #1 (Valleywood), #2A (KSU), #3 (Northwing) are directed away from the Northeast Drainage Basin along with a portion of Watershed #2B (Star Farms). Only a portion of Watershed #2B will fully remain in the Northeast Drainage Basin. That portion is identified as Watershed #2B-2. The existing swale along the east-west property line shared between Northwing and Star Farms will be re-graded. It will break the drainage direction approximately 900-feet west of the northeast property corner where a future street extension is shown on the Northwing preliminary plat. The portion of the swale east of that location will drain easterly as presently occurs. The portion of that swale west of that location will drain west and south into Northwing and through a series of detention basins to Northwing's southeast property corner.

WATERSHED #2B-2 (Star Farms): This watershed contains 108.9 acres and consists of agricultural (cultivated row crops) land-use overlaying Hydrological Soil Group Classifications B (3.1 acres), C (86.4 acres) and D (19.4 acres). The CN values used are 75, 82 and 85 for the soil types respectively for this land-use. The composite CN value is 82. The Tc is estimated at 1.8 hours. The peak discharge from this watershed is estimated at 61 cfs, 116 cfs and 191 cfs for the 2, 10 and 100-year storms respectively.

Refer to the section below under "CONCLUSION" for total peak discharge leaving the Drainage Basin at the northeast corner of Northwing when overflow occurs from the Southeast Drainage Basin.

## B. SOUTHEAST DRAINAGE BASIN:

As previously stated, the Southeast Drainage Basin will increase in size under post-developed conditions. It will include Watersheds #1 (Valleywood), #2A (KSU), #2B-1 (Star Farms), #3 (Northwing), and #4 (Northwing). Watershed #3 will be subdivided into a series of smaller watersheds, each possessing a storm water detention facility. A schematic diagram showing the watershed and detention basin network is included in the Appendix. Former Watershed #4b (off-site lot) is incorporated into Watershed #3E under proposed conditions. The watershed descriptions that immediately follow include the peak discharges entering the respective detention facility. Refer to the section below under "STORM WATER DETENTION" for total peak discharges leaving each respective detention basin.

WATERSHED #1 (Valleywood): This watershed contains 32.0 acres and consists of single-family residential land-use overlaying Hydrological Soil Group Classifications B (2.2 acres), C (13.5 acres) and D (16.3 acres). The CN values used are 75, 83 and 87 for the soil types respectively for single-family residential land-use. The composite CN value is 84. The Tc is estimated at 1.4 hours (84 minutes). The peak discharge from this watershed is estimated at 24 cfs, 44 cfs and 70 cfs for the 2, 10 and 100-year storms respectively. These discharges will enter a storm water detention basin located in Watershed 3A.

WATERSHED #2A (KSU Research): This watershed contains 7.9 acres and consists of agricultural (turf plots) land-use overlaying Hydrological Soil Group Classifications C (7.5 acres) and D (0.4 acres). The CN values used are 74 and 80 for the soil types respectively for this land-use. The composite CN value is 74. The Tc is estimated at 1.4 hours (84 minutes). The peak discharge from this watershed is estimated at 3 cfs, 8 cfs and 14 cfs for the 2, 10 and 100-year storms respectively. These discharges will enter a storm water detention basin located in Watershed 3A.

WATERSHED #2B-1 (Star Farms): This watershed contains 23.2 acres and consists of agricultural (cultivated row crops) land-use overlaying Hydrological Soil Group Classifications C (9.2 acres) and D (14.0 acres). The CN values used are 82 and 85 for the soil types respectively for this land-use. The composite CN value is 84. The Tc is estimated at 0.5 hour (29 minutes). The peak discharge from this watershed is estimated at 36 cfs, 66 cfs and 105 cfs for the 2, 10 and 100-year storms respectively. These discharges will enter a storm water detention basin located in Watershed 3E.

WATERSHED #3A (Northwing): This 17.5-acre watershed consists of single-family residential (15.3 acres), open space (brush – 1.2 acre) and grassed detention area (1.0 acre) uses, all overlaying Hydrological Soil Group Classification C. The CN values used are 83, 65 and 74 respectively for the land-uses and this soil condition. The composite CN value is 81. This watershed will discharge into the swale that will be re-graded along the north-south property line shared with Star Farms. The preliminary plat shows a proposed street extension across the swale at the southeast corner of #3A. Although the crossing will not occur unless and until Star Farms should develop at that location, when it is constructed, the swale will essentially function as a detention basin with the culvert structure beneath the street serving as the release structure. The Tc for the combined watersheds discharging through the detention basin is estimated to be 1.4 hours (84 minutes). The peak discharge entering the detention basin from this watershed is estimated at 11 cfs, 21 cfs and 35 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3B (Northwing): This 5.9-acre watershed consists of single-family residential (5.1 acres) and grassed detention area (0.8 acre) uses, all overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 82. This watershed will drain into a detention facility that will in turn discharge in the Watershed 3A detention facility. The Tc for this watershed is estimated to be 0.3 hour (19 minutes). The peak discharge entering the detention basin is estimated at 11 cfs, 20 cfs and 32 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3C (Northwing): This 7.6-acre watershed consists of single-family residential (6.5 acres) and grassed detention area (1.1 acres) uses, all overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 82. This watershed will drain into a detention facility that will also in turn discharge in the Watershed 3A detention facility. The Tc for this watershed is estimated to be 0.3 hour (18 minutes). The peak discharge entering the detention basin is estimated at 14 cfs, 26 cfs and 43 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3D (Northwing): This 11.9-acre watershed consists of single-family residential (9.4 acres) and grassed detention area (2.5 acres) uses, all overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 81. This watershed will drain into a detention facility that will in turn discharge in the Watershed 3E detention facility. The Tc for this watershed is estimated to be 0.4 hour (23 minutes). The peak discharge entering the detention basin is estimated at 19 cfs, 36 cfs and 59 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3E (Northwing): This 24.8-acre watershed consists of single-family residential (17.8 acres) and grassed detention area (2.7 acres) uses overlaying Hydrological Soil Group Classification C; and single-family residential (3.8 acres) and grassed detention area (0.5 acre) uses overlaying Hydrological Soil Group Classification D. The CN values

used are 83, 74, 87 and 80 respectively for the land-uses and these soil conditions. The composite CN value is 83. This watershed will drain into a detention facility that will in turn discharge in the Watershed 3F detention facility. The Tc for this watershed is estimated to be 0.5 hour (27 minutes). The peak discharge entering the detention basin is estimated at 39 cfs, 72 cfs and 115 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3F (Northwing): This 12.2-acre watershed consists of single-family residential (10.2 acres) and grassed detention area (2.0 acres) uses overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 82. This watershed will drain into a detention facility that will in turn discharge in the Watershed 4 detention facility. The Tc for this watershed is estimated to be 0.4 hour (24 minutes). The peak discharge entering the detention basin is estimated at 19 cfs, 37 cfs and 59 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3G-1 (Northwing): This 5.9-acre watershed consists of single-family residential (2.1 acres) and grassed detention area (0.3 acre) uses overlaying Hydrological Soil Group Classification C; and single-family residential (2.4 acres) and grassed detention area (1.1 acres) uses overlaying Hydrological Soil Group Classification D. The CN values used are 83, 74, 87 and 80 respectively for the land-uses and these soil conditions. The composite CN value is 84. This watershed will drain into a detention facility that will in turn discharge in the Watershed 3G-2 detention facility. The Tc for this watershed is estimated to be 0.4 hour (24 minutes). The peak discharge entering the detention basin is estimated at 10 cfs, 19 cfs and 30 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #3G-2 (Northwing): This 4.8-acre watershed consists of single-family residential (3.7 acres) and grassed detention area (1.1 acres) uses overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 81. This watershed will drain into a detention facility that will also in turn discharge in the Watershed 4 detention facility. The Tc for this watershed is estimated to be 0.3 hour (18 minutes). The peak discharge entering the detention basin is estimated at 8 cfs, 16 cfs and 26 cfs for the 2, 10 and 100-year storms respectively.

WATERSHED #4 (Northwing): This 9.3-acre watershed consists of single-family residential (7.8 acres) and grassed detention area (1.5 acres) uses overlaying Hydrological Soil Group Classification C. The CN values used are 83 and 74 respectively for the land-uses and this soil condition. The composite CN value is 82. This watershed will drain into a detention facility at the southeast corner of Northwing which will discharge through Marlatt Avenue storm sewer infrastructure into the Marlatt Ditch. The Tc for this watershed is estimated to be 0.3 hour (17 minutes). The peak discharge entering the detention basin is estimated at 18 cfs, 33 cfs and 53 cfs for the 2, 10 and 100-year storms respectively.

**C. WEST DRAINAGE BASIN:**

WATERSHED #5 (Northwing): This watershed contains 3.3 acre and consists of open space (grassy swale and fringe area) land-use overlaying Hydrological Soil Group Classifications C. The CN value used is 74 for this soil type for this land-use. The Tc is estimated at 0.6 hour (37 minutes). The peak discharge from this watershed is estimated at 2 cfs, 5 cfs and 10 cfs for the 2, 10 and 100-year storms respectively.

**STORM WATER DETENTION:**

As previously indicated, a series of storm water detention facilities are proposed to manage peak discharges from the Northwing development. Most of the detention basins will have very minimal slopes in the bottom due to the limited available topographic relief. Therefore, most of the basins will have a narrow concrete pilot channel along bottom to the flowline of the outlet structure. The pilot channel will help convey the storm water through the basin on a minimal gradient and help establish a finish grade when periodic maintenance would be required to remove any accumulated sediment deposition that may occur over time. The following is a brief description of each detention basin along with a summary of the results from modeling various storm routings.

The basins are interconnected with each other and were modeled as such. The final outlet occurs at the southeast corner of the site where Basin #4 discharges through the Marlatt Avenue storm sewer system into Marlatt Ditch. The storm sewer system contains two curb inlets in series, each of which were treated as miniature detention basins during the routing to account for the head losses that occur at those locations. A schematic diagram showing the watershed and detention basin network is included in the Appendix.

BASIN 3A: This basin was modeled with a double 5x3 RCB outlet structure having an invert elevation of 1020.0. Basins 3B and 3C empty into Basin 3A. Basin 3A discharges directly into Basin 3E. The composite performance of Basin 3A (including all upstream flows entering the basin) is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	46	42	1021.79	0.566
10-Year	83	76	1022.44	1.199
100-Year	128	114	1023.11	2.639

BASIN 3B: This basin discharges through an 18-inch RCP with an invert elevation of 1021.85. As previously indicated, it discharges directly into Basin 3A. The composite performance of Basin 3B is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	11	4	1023.31	0.219

10-Year	20	6	1023.72	0.465
100-Year	32	7	1024.22	0.908

**BASIN 3C:** This basin discharges through an 18-inch RCP with an invert elevation of 1021.05. As previously indicated, it discharges directly into Basin 3A. The composite performance of Basin 3C is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	14	5	1022.96	0.289
10-Year	26	5	1023.49	0.719
100-Year	43	5	1023.95	1.425

**BASIN 3D:** This basin discharges through an 18-inch RCP with an invert elevation of 1020.30. This basin discharges directly into Basin 3E. The composite performance of Basin 3D is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	19	6	1022.09	0.462
10-Year	36	6	1022.66	1.225
100-Year	59	7	1023.26	2.434

**BASIN 3E:** This basin discharges through a 36-inch RCP with an invert elevation of 1018.15. Basin 3E will discharge directly into Basin 3F. A second release structure is a weir located as a road overtopping condition for a future street extension into Star Farm property. The weir is set at elevation 1021.5. As detained storm water elevation rises above elevation 1021.5, a portion of the discharge from Basin 3E will be directed toward the northeast property corner. As previously indicated, Basin 3E receives discharges from Basin 3A and 3D. The composite performance of Basin 3E (including all upstream flows entering the basin) is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	99	42	1021.51	4.990
10-Year	177	85	1022.03	7.743
100-Year	259	137	1022.68	11.348

That portion of the peak discharges out listed above for Basin 3E that is directed toward the northeast property corner is 4 cfs, 45 cfs, and 107 cfs for the 2-year, 10-year and 100-year storms respectively.

**BASIN 3F:** This basin discharges through a 36-inch RCP with an invert elevation of 1017.20 and discharges directly into Basin 4. The composite performance of Basin 3F (including all upstream flows entering the basin) is summarized as follows:

<u>DESIGN STORM</u>	<u>PEAK IN (cfs)</u>	<u>PEAK OUT (cfs)</u>	<u>PEAK ELEV.</u>	<u>PEAK STORAGE (ac-ft)</u>
2-Year	41	32	1020.34	2.904
10-Year	67	37	1021.07	4.691
100-Year	94	36	1022.11	7.494

**BASIN 3G-1:** This basin discharges through a 12-inch PVC with an invert elevation of 1018.50. It discharges directly into Basin 3G-2. A low berm may be required to separate Basin 3G-1 from the swale located along the east-west property line shared with Star Farms. The composite performance of Basin 3G-1 is summarized as follows:

<u>DESIGN STORM</u>	<u>PEAK IN (cfs)</u>	<u>PEAK OUT (cfs)</u>	<u>PEAK ELEV.</u>	<u>PEAK STORAGE (ac-ft)</u>
2-Year	10	3	1020.42	0.287
10-Year	19	3	1021.07	0.697
100-Year	30	2	1021.88	1.401

**BASIN 3G-2:** This basin discharges through a 12-inch PVC with an invert elevation of 1017.20. It will discharge directly into Basin 4. As previously indicated, it receives discharges from Basin 3G-1. The composite performance of Basin 3G-2 (including all upstream flows entering the basin) is summarized as follows:

<u>DESIGN STORM</u>	<u>PEAK IN (cfs)</u>	<u>PEAK OUT (cfs)</u>	<u>PEAK ELEV.</u>	<u>PEAK STORAGE (ac-ft)</u>
2-Year	11	3	1019.54	0.462
10-Year	18	3	1020.44	1.120
100-Year	28	4	1021.43	2.390

**BASIN 4:** This basin will discharge through a 60x38 HERCP with an invert elevation of 1016.78 in combination of a 24-inch RCP with an invert elevation of 1016.28. As previously indicated, Basin 4 receives discharges from Basin 3F and 3G-2. PondPack has a limitation in that modeling HERCP outlets is not an available feature. However, by cross-referencing SWMPP nomographs for headwater and tailwater condition under inlet and outlet control, it was determined that twin 36-inch RCPs will perform similar to a single 60x38 HERCP in terms of flow and elevation. Therefore, two 36-inch RCPs were inserted in the model to replicate the single HERCP structure. Basin 4 HERCP will discharge directly into a new curb inlet being constructed on the north side of Marlatt Avenue near the southeast property corner. The 24-inch RCP will bypass the north curb inlet and discharge directly into Marlatt Ditch. Marlatt Avenue construction plans were referenced for sizing and elevation information of the new storm sewer infrastructure. A ditch inlet and small HERCP located

in vicinity of Basin #4 were constructed with the Marlatt Avenue improvements. Those two components of the storm sewer system will be replaced with the HERCP since they would not adequately serve proposed flows. The composite performance of Basin 4 (including all upstream flows entering the basin) is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	36	36	1018.63	0.725
10-Year	50	42	1019.75	1.671
100-Year	63	43	1021.19	3.268

**NORTH CURB INLET:** This basin will discharge through a 60x38 HERCP with an invert elevation of 1016.54. As previously indicated, it receives discharges from Basin 4. As with basin 4, two 36-inch RCPs were inserted in the model to replicate the single HERCP structure in the storm model routing. The North Curb Inlet discharges directly into the South Curb Inlet located on the opposite side of Marlatt Avenue. This watershed contains 0.2 acres, has a CN value of 96 and a Tc of 0.12 hour. The composite performance of the North Curb Inlet (assuming all the immediate right-of-way drainage enters the inlet as well) is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	25	25	1018.49	0.001
10-Year	32	32	1019.66	0.002
100-Year	32	32	1021.13	0.002

**SOUTH CURB INLET:** This basin will discharge through a 60x38 HERCP with an invert elevation of 1016.29. As previously indicated, it receives discharges from the North Curb Inlet. As with basin 4, two 36-inch RCPs were inserted in the model to replicate the single HERCP structure in the storm model routing. The South Curb Inlet discharges directly into the Marlatt Ditch. This watershed contains 0.2 acres, has a CN value of 96 and a Tc of 0.12 hour. The composite performance of the South Curb Inlet (assuming all the immediate right-of-way drainage enters the inlet as well) is summarized as follows:

DESIGN STORM	PEAK IN (cfs)	PEAK OUT (cfs)	PEAK ELEV.	PEAK STORAGE (ac-ft)
2-Year	25	25	1018.37	0.001
10-Year	32	32	1019.58	0.002
100-Year	32	32	1021.06	0.002

### CONCLUSION:

It was previously mentioned that the primary objectives of this study was to develop a storm water management plan that would result in a decrease, or at least avoid an increase in the peak discharges

from the site when comparing proposed conditions with that which exists under pre-developed conditions. The comparison of peak discharges under pre-developed and post developed conditions may be summarized in the following:

**NORTHEAST DRAINAGE BASIN:**

<u>DESIGN STORM</u>	<u>PRE-DEVELOPED DISCHARGE (cfs)</u>	<u>POST-DEVELOPED DISCHARGE (cfs)</u>
2-Year	122	61
10-Year	229	156
100-Year	372	293

**SOUTHEAST DRAINAGE BASIN:**

<u>DESIGN STORM</u>	<u>PRE-DEVELOPED DISCHARGE (cfs)</u>	<u>POST-DEVELOPED DISCHARGE (cfs)</u>
2-Year	28	36
10-Year	52	42
100-Year	85	43

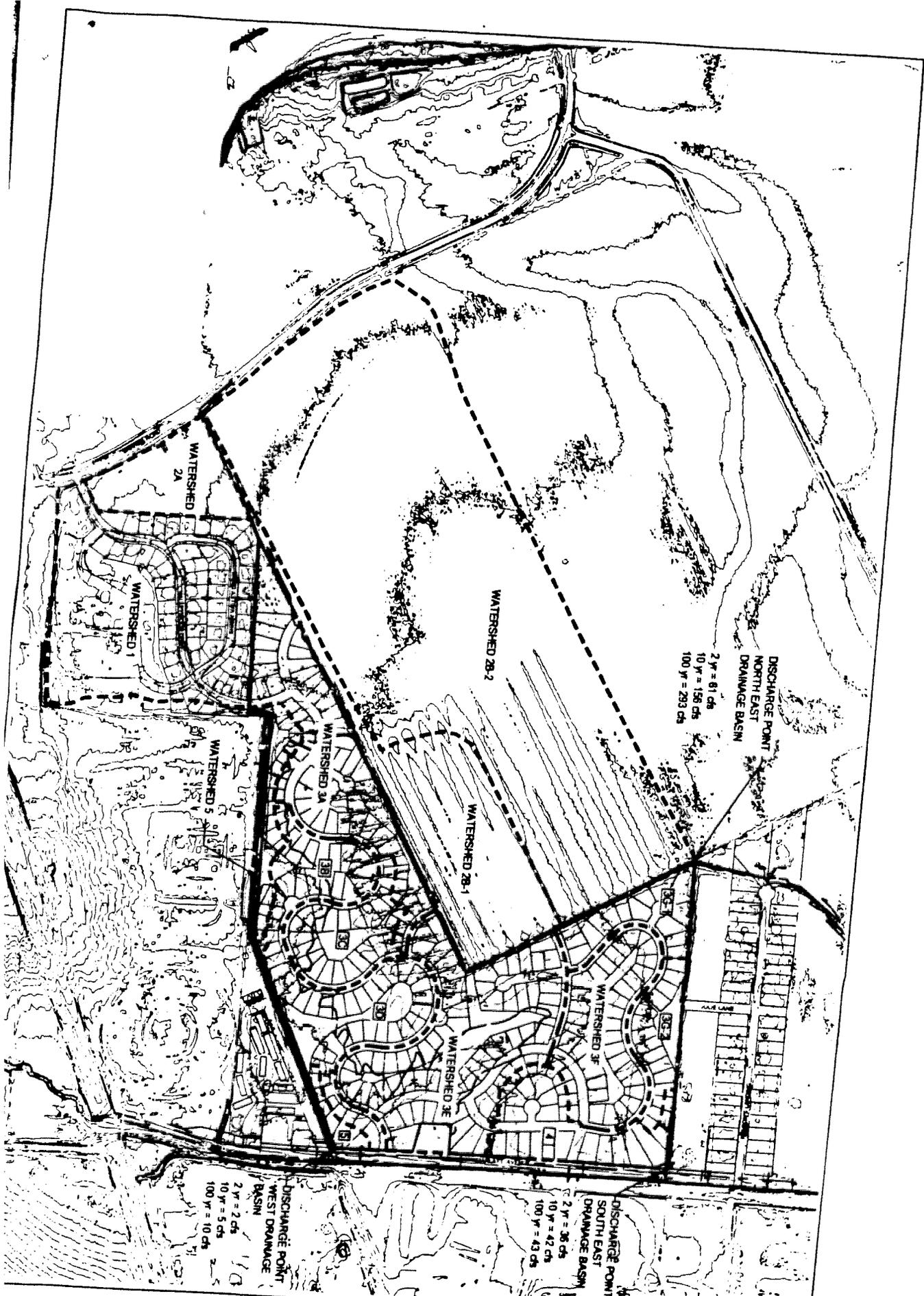
**WEST DRAINAGE BASIN:**

<u>DESIGN STORM</u>	<u>PRE-DEVELOPED DISCHARGE (cfs)</u>	<u>POST-DEVELOPED DISCHARGE (cfs)</u>
2-Year	2	2
10-Year	6	5
100-Year	10	10

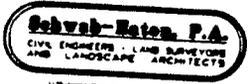
Based on the modeled results, it appears that the objectives have been met in every scenario except perhaps the 2-Year peak discharge from the Southeast Drainage Basin; however, the increase in that scenario was minimal with respect to the overall quantity.

The development of the storm water detention facilities is critical to meeting the objectives for controlling peak discharges. In principle, the proposed development should actually reduce many of the existing drainage problems in the immediate downstream area, especially in the smaller, more frequent storm events. The optional development of rain gardens and bio-swales may even further reduce peak discharges as well as improve storm water quality. Based on the 24-hour storm event, the detention basins should be generally empty within 36 hours of the beginning of the storm.

The model should be reviewed and updated as the Northwing Addition develops, particularly if proposed improvements should deviate in design or construction from the current criteria as planned and modeled herein.



DATE: 04/11/08  
 SCALE: 1" = 500'



Northwing Addition Drainage  
 Study  
 Proposed Watershed Map

# APPLICATION

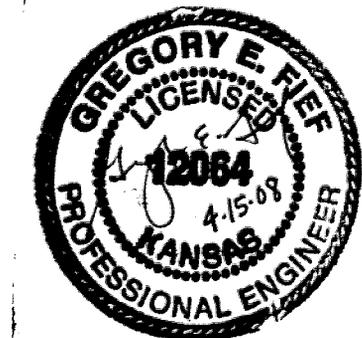
## Northwing Addition Traffic Impact Study

Submitted to:  
The City of Manhattan  
1101 Poyntz Avenue  
Manhattan, KS 66502

Developer:  
Frey Properties Development Company  
C/o Greg Anders  
219 Wava Avenue  
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Submitted by:  
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December 2007  
Revised April 15, 2008



## **I. INTRODUCTION**

The following is a traffic impact study intended to determine the effect of the proposed Northwing Addition on Marlatt Avenue and surrounding area in northeast Manhattan.

### **A. Proposed Development**

Northwing Addition is a proposed 106-acre development along the north side of Marlatt Avenue east of Tuttle Creek Boulevard. The property is currently outside City limits. Annexation into the City of Manhattan is planned.

The development will be comprised of 286 single family lots in a coving concept with several open space tracts. The site for the proposed development is currently agricultural land.

Access to the development will be at two direct connections to Marlatt Avenue (Northwing Drive and Matter Place). Each has adequate sight distance. A connection to the Valleywood Subdivision is also provided as an extension of Valleywood Drive. However, due to concerns expressed by the Riley County Public Works Department, this connection will only be used in emergency situations. A bollard will be placed across the drive to prohibit regular traffic flow.

The drives will be constructed to meet City of Manhattan standards and will conform to established design criteria, including the *City of Manhattan Subdivision and Zoning Regulations*. These regulations include provisions for minimum entrance width, minimum curb return radii, minimum intersection sight distance, minimum pavement widths, minimum centerline radii, and alignment with intersecting roadways.

### **B. Study Methodology**

Existing traffic volumes on Marlatt and Casement Avenues were obtained from the City of Manhattan. The data was gathered by BG Consultants for a study completed for Brookfield Addition Unit Eight. A 2% per year increase in traffic volume is assumed for future growth.

Proposed trips were generated using the *Trip Generation Handbook*, published by the Institute of Transportation Engineers.

## **II. EXISTING CONDITIONS**

### **A. Street Classifications**

According to the *Manhattan Area Transportation Strategy: Connecting to 2020*, the functional classifications of the roadways to be studied are as follows:

- Marlatt Avenue - Arterial
- Casement Avenue - Arterial
- Interior streets of the development - Local

### **B. Street Characteristics**

Marlatt Avenue is a 2-lane rural arterial with a posted speed limit of 30 mph through the study site. Currently the roadway is being reconstructed with significant improvements to the roadway and utilities adjacent to the corridor. The typical section is a 2-lane, 29' wide concrete pavement with curb and gutter. Storm sewers and a 5' sidewalk are also a part of the project.

Casement Avenue runs north and south from its intersection with Marlatt. It is a 2-lane rural section roadway. The posted speed limit is 40 mph.

### **C. Current Traffic Volumes**

According to the Traffic Count Map of Manhattan (Published by KDOT in April 2007 for the year ending Jun 30, 2006) Marlatt Avenue has a daily volume of 1,235 vehicles at the intersection of Casement Road. Assuming a 2% increase per year, the daily volume in 2017 is calculated as 1,505.

Under current conditions, Marlatt Avenue flows uninterrupted through the study area.

### III. EXISTING PLUS DEVELOPMENT (2017 – Full Build-Out)

#### A. Trip Generation

Proposed trips for the new development were generated using the *Trip Generation Handbook*. For the proposed single-family and duplex lots, Land Use 210 (Single Family Detached) was used. The entering/exiting distributions are taken from the *Trip Generation Handbook* also. Marlatt and Casement trips were obtained by increasing the 2007 volume by 2% per year.

	Weekday			AM Peak Hr.			PM Peak Hr.		
	Total	In	Out	Total	In	Out	Total	In	Out
Full Build-out At 2017	2,737	1,368	1,369	215	54	161	289	185	104

**Table 1. Trip Generation Summary**

The PM Peak-hour results in the greatest number of trips generated for a one-hour time increment. Therefore, these values were used to study the impact on the local street system. The development yields a total of 292 trips during the PM peak-hour.

#### B. Trip Distribution and Assignment

In order to distribute the trips generated by the proposed development, it was necessary to determine a generalized flow pattern for the proposed development area. With the location of the project on the outskirts of town, it can be assumed that a majority of the trips will be westbound on Marlatt or southbound on Tuttle Creek Boulevard and into Manhattan. For this study, it was assumed that the trips would follow a 70% - 30% distribution (westbound-eastbound).

In the westbound direction, the traffic will proceed to the intersection of Marlatt and Tuttle Creek Boulevard (Highway 24). Significant improvements are planned for this intersection with an anticipated letting date of November 2008. These improvements will provide additional capacity to the intersection and should accommodate the traffic generated by the Northwing development.

In the eastbound direction the traffic will reach the T-intersection formed by Marlatt and Casement. At this point, the majority of the trips are assumed to be directed southbound toward Manhattan. The capacity of this intersection is examined in this study. The trips generated by the Northwing Addition and the distributions are shown on Figure 3.

In urban areas, overall Level Of Service (LOS) is often controlled by the LOS of the intersections in the area, especially the intersections of arterials. Table 4-2 from the MATS indicates the maximum daily traffic for a 2-lane undivided arterial is 7,360 for a LOS C. For LOS D the volume is 12,160 and for E it is 13,440.

Volumes associated with the study area are below these values. Marlatt Avenue AADT is approximately 1,235 vpd near Casement and 5,180 vpd near Denison. The activity generated by Colonial Gardens mobile home park and the Tuttle Creek Residences apartment complex will obviously inflate those volumes near the intersection of Tuttle Creek Boulevard. In the future these numbers may approach a threshold of concern near the intersection. However, the planned improvements to the TCB/Marlatt intersection should account for this.

Because of Northwing Addition, near TCB the AADT on Marlatt Avenue will increase by approximately 2,050 vehicles per day. The volume on Marlatt near Casement is anticipated to be 700 additional vehicles per day.

### **C. Intersection Analysis**

In the analysis of intersections, LOS is a function of delay (the time a driver has to wait to complete a movement through an intersection). LOS is graded from A to F, with A being excellent and F representing a complete breakdown of the intersection system. Generally, roadway segments are designed to operate at LOS C at the end of their design lives. Specifically, in the *Manhattan Area Transportation Strategy (MATS)*, it states, "Arterial streets will operate at Level of Service D or better; other streets will operate at Level of Service C or better."

HCS2000 Software was used to evaluate the Level of Service at the project intersections and at Casement and Marlatt. At full build out of the Northwing Addition, each intersection operates adequately. During the P.M. Peak hours, delays are less than 10 seconds and Levels of Service are A's and B's.

Program output detailing these results is in the Appendix.

#### **IV. CONCLUSIONS**

As a result of the analysis conducted in this study, the following conclusions are drawn.

- The proposed subdivision is a significant development in relation to the traffic system in the area.
- Under future conditions of full build-out of the Northwing Addition, the intersections of Northwing Drive and Matter Place with Marlatt Avenue will operate adequately.
- The same can be said of the Casement/Marlatt intersection.
- All turning movements function at LOS B or better, and the delays are minimal.
- As recognized in the MATS, turn lanes are recommended for certain conditions. Right turn lanes are to be constructed when the number of right turns exceeds 100 per hour (streets with speeds less than 40 mph). This number is not anticipated to be exceeded on any of the intersections.
- Also, according to MATS, left turn lanes should also be considered on intersections of collectors, arterials, and major commercial driveways with arterials. A continuous center turn lane should also be considered in areas of closely spaced driveways. Neither of these conditions will exist. Therefore, left turn lanes are not suggested.
- No impact to the Valleywood Addition will be realized due to the "emergency only" connection between the two subdivisions.

#### **V. RECOMMENDATIONS**

As a result of the analyses conducted in this study, the following recommendations can be made:

- Because the roadway network in the study area is projected to function well with the addition of the proposed development, no major lane improvements to the roadway are recommended at this time for the purpose of maintaining or improving capacity.
- As Manhattan continues to grow, the roadway network in the study area will undoubtedly experience changes in traffic patterns and volumes. The effects of future development in the area will likely affect the efficiency of the roadways and intersections. These effects should be monitored periodically so long range planning can be achieved.

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3. *Manhattan Area Transportation Strategy*. February 2000.
4. McTrans Center, University of Florida. *HCS-2000 Highway Capacity Software*. 1994-2001.
5. KDOT, City of Manhattan, KS. AADT Map, November 2006.
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TRAFFIC STUDY

# NORTHWING ADDITION

PREPARED BY

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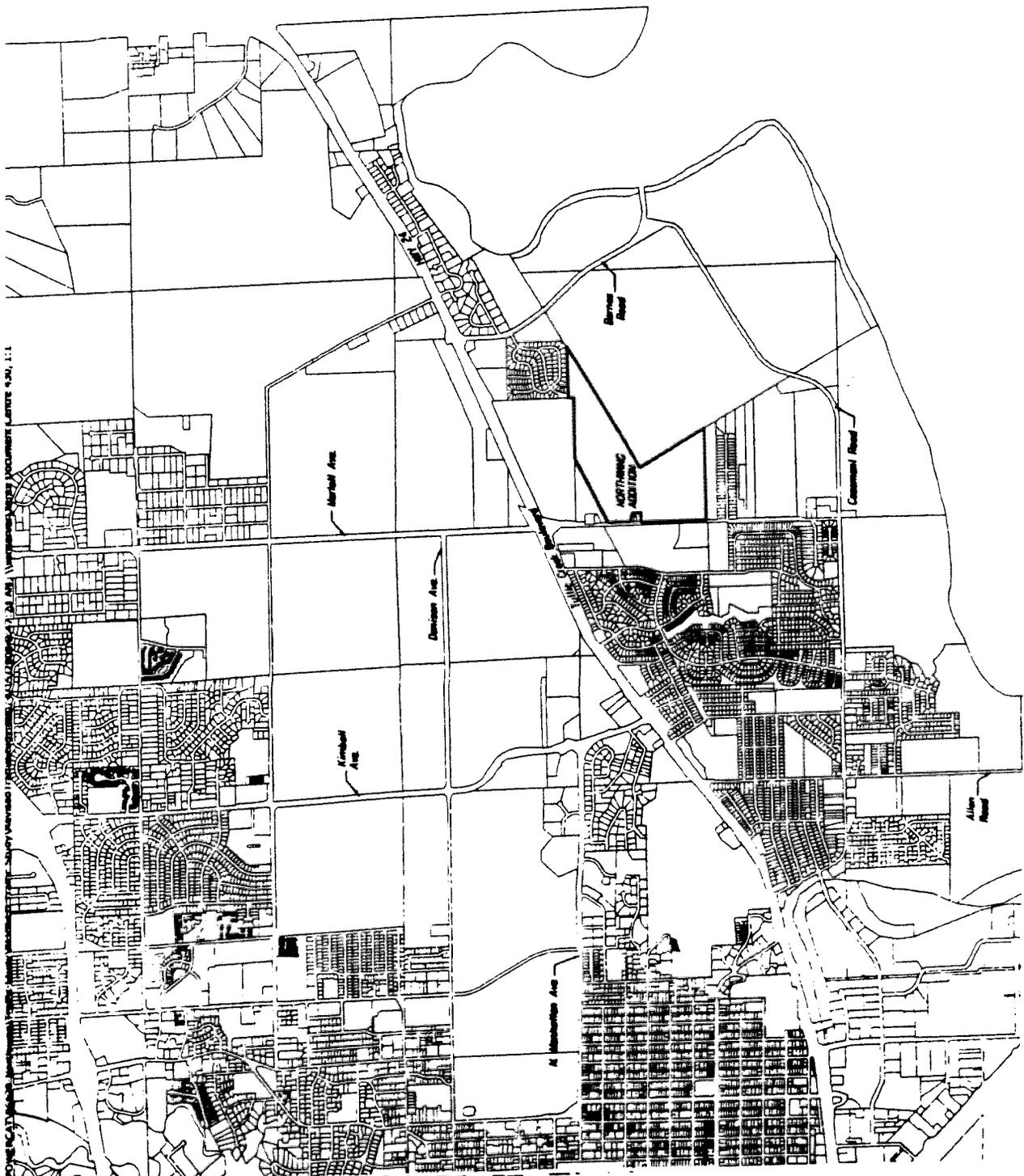
DECEMBER 2007 - REVISED APRIL 15, 2008

**Figure 1**

Vicinity Map



SCALE 1" = 2000'



DATE PLOTTED: 12/15/07



4-103.

R-1. Single-Family Residential District. The R-1, Single-Family Residential District is designed to provide a dwelling zone at a density no greater than one dwelling unit per 6,500 square feet.

(A) Permitted Uses.

- (1) Churches, chapels, temples and synagogues.
- (2) Group Homes.
- (3) Parks and playgrounds.
- (4) Schools.
- (5) Single-family detached dwellings.

(B) Conditional Uses.

- (1) Bed and Breakfast Homes.
- (2) Bed and Breakfast Inns.
- (3) Golf courses, including accessory clubhouses and driving ranges.
- (4) Group day care centers and nursery schools.
- (5) Health, fitness and service clubs.
- (6) Hospitals and nursing homes.
- (7) Lodging/boarding houses.
- (8) Nonprofit Social Service Facilities.
- (9) Public Utilities, such as electrical or telephone substations, that are not owned or operated by a municipality; where employees are generally not present; and that are in or near the area they are designed to serve.

(C) Lot Size Requirements.

- (1) Minimum lot area:
  - (a) Single-family detached dwellings: 6,500 square feet in area.
  - (b) All other permitted and conditional uses: 10,000 square feet in area.

- (2) Minimum lot width:
  - (a) Single-family detached dwellings: Fifty (50) feet.
  - (b) All other permitted and conditional uses: Seventy-five (75) feet.
- (3) Minimum lot depth: 100 feet.

(D) Bulk Regulations.

- (1) Maximum structure height: Thirty-five (35) feet.
- (2) Yard requirements:
  - (a) Minimum front yard: Twenty-five (25) feet on all sides abutting a street.
  - (b) Minimum side yard:
    - (1) Residential Buildings: Eight (8) feet on each side of the zoning lot.
    - (2) All other permitted and conditional uses: Fifteen (15) feet on each side of the zoning lot.
  - (c) Minimum rear yard: Twenty-five (25) feet.
- (3) Maximum lot coverage: Thirty-five (35) percent.

(E) Use Limitations.

- (1) Bed and Breakfast Homes.
  - (a) Inspections: Bed and Breakfast Homes shall be inspected by all applicable agencies prior to occupancy, and shall be subject to an annual inspection by all applicable agencies.
  - (b) Prohibited Accessory Uses: Uses such as receptions, meetings, weddings, parties or the serving of meals to persons other than overnight guests, which are conducted in association with a Bed and Breakfast Home, shall be prohibited.
- (2) Bed and Breakfast Inns.
  - (a) Accessory Uses: Uses such as receptions, meetings, weddings, parties, or the serving of meals to persons other than overnight guests of the Inn, may be considered by the

Board of Zoning Appeals as part of the Conditional Use Permit review, provided that adequate off-street parking, and other facilities, are available, and that the functions offered to non-overnight guests terminate no later than 10 P.M.

- (b) Guest Rooms: Guest rooms may consist of a single room, or suite, but in no instance shall there be more than a total of nine (9) guest sleeping rooms. The owner's residence shall not be included in the calculation of sleeping rooms.
- (c) Inspections: Bed and Breakfast Inns shall be inspected by all applicable agencies prior to occupancy, and shall be subject to an annual inspection by all applicable agencies.
- (d) Licensing: A city lodging license and a food establishment license shall be required.

-  3. CONSIDER THE ANNEXATION OF A 106-ACRE TRACT OF LAND FOR THE PROPOSED NORTHWING ADDITION, GENERALLY LOCATED APPROXIMATELY 1,400 FEET EAST OF THE MARLATT AVENUE AND TUTTLE CREEK BOULEVARD INTERSECTION ALONG THE NORTH SIDE OF MARLATT AVENUE, ADJOINING TUTTLE CREEK RESIDENCE SUBDIVISION, COLONIAL GARDENS TRAILER COURT AND VALLEYWOOD SUBDIVISION, SOUTH OF STAR FARMS, AND APPROXIMATELY 430 FEET WEST OF NELSON'S LANDING STREET. (OWNER: ANDERS TRUST, ISAAC W. ANDERS AND JANET J. ANDERS/APPLICANT: FREY PROPERTY DEVELOPMENT CORPORATION)
-  4. A PUBLIC HEARING TO CONSIDER THE REZONING OF THE PROPOSED NORTHWING ADDITION, GENERALLY LOCATED APPROXIMATELY 1,400 FEET EAST OF THE MARLATT AVENUE AND TUTTLE CREEK BOULEVARD INTERSECTION ALONG THE NORTH SIDE OF MARLATT AVENUE, ADJOINING TUTTLE CREEK RESIDENCE SUBDIVISION, COLONIAL GARDENS TRAILER COURT AND VALLEYWOOD SUBDIVISION, SOUTH OF STAR FARMS, AND APPROXIMATELY 430 FEET WEST OF NELSON'S LANDING STREET, FROM COUNTY G-1, GENERAL AGRICULTURAL DISTRICT, TO R-1, SINGLE-FAMILY RESIDENTIAL DISTRICT. (OWNER: ANDERS TRUST, ISAAC W. ANDERS AND JANET J. ANDERS/APPLICANT: FREY PROPERTY DEVELOPMENT CORPORATION)
5. A PUBLIC HEARING TO CONSIDER THE PRELIMINARY PLAT OF THE NORTHWING ADDITION, A 106-ACRE TRACT OF LAND TO CONSIST OF 286 SINGLE-FAMILY RESIDENTIAL LOTS AND EIGHT (8) COMMON TRACTS, GENERALLY LOCATED APPROXIMATELY 1,400 FEET EAST OF THE MARLATT AVENUE AND TUTTLE CREEK BOULEVARD INTERSECTION ALONG THE NORTH SIDE OF MARLATT AVENUE, ADJOINING TUTTLE CREEK RESIDENCE SUBDIVISION, COLONIAL GARDENS TRAILER COURT AND VALLEYWOOD SUBDIVISION, SOUTH OF STAR FARMS, AND APPROXIMATELY 430 FEET WEST OF NELSON'S LANDING STREET. (OWNER: ANDERS TRUST, ISAAC W. ANDERS AND JANET J. ANDERS/APPLICANT: FREY PROPERTY DEVELOPMENT CORPORATION)

Kratochvil and Reynard stepped down on items 3, 4 and 5, due to conflicts of interest.

Bunger presented the Staff Reports on all three items, indicating that City Administration recommended approval of the annexation, based on conformance with the Comprehensive Plan; recommended approval of the rezoning, based on the findings in the Staff Report; and recommended approval of the Preliminary Plat, based on conformance with the Manhattan Urban Area Subdivision Regulations, with

two conditions applicable to the Preliminary Plat:

1. The two requested Variations shall be approved, and
2. Northwing Addition shall be annexed and rezoned, as proposed.

Hill asked how wide the streets will be. Bunger indicated there will be 31-foot wide streets in 60-foot wide rights-of-way.

Rolley asked for clarification of the two requested variations on the Preliminary Plat.

Bunger explained that the variations to allow longer block lengths on two streets and provision of eyebrow cul-de-sacs were necessary, due to the unique coving design of the development.

Ham asked about access to the north and Valleywood.

Bunger explained that the Plat provides three future access points to the property to the northeast and the connection into Valleywood, which Riley County wanted to be limited to emergency vehicles only by use of bollards.

Rolley opened the public hearing.

Greg Anders, Frey Property Development Corporation, indicated that he and his brothers, Doug and Max, were available for questions, as well as their consultants from Schwab-Eaton.

Hill asked for an explanation of the drainage plan.

Leon Brown, Schwab-Eaton, provided an overview of the watershed and proposed drainage plan for the development. He said there is considerable pass-through runoff through the development site from the agricultural lands to the north. He said there are three discharge areas planned, one at the southwest corner that takes water from Valleywood to the Marlatt ditch; a second at the southeast corner of the site that takes water from the development through a series of on-site dry detention basins, then under McCall Road to the Marlatt ditch; and a third at the northeast corner of the site that takes water from the agricultural lands to the north, and some from the development in certain overflow conditions, and directs it into an existing ditch that passes through the northern end of Nelson's Landing. Brown explained that the post-development rates of runoff are reduced significantly compared to the existing conditions at the northeast and southeast discharge points. For a 100 year storm event the rates were reduced from 372 cfs, to 293 cfs and from 86 cfs, to 43 cfs respectively. He said their modeling also takes into account the flows in the Marlatt ditch.

Rolley asked for an explanation of the proposed coving design for the development.

Kirk Hoke, Schwab-Eaton, explained that coving provides a layout of curved streets that has more curb-appeal because houses don't all line up on each other and there are varied setbacks along the streets that provide a feel of more open space and larger lots. He said all the setbacks would be equal to, or greater than the minimum 25 foot front yard requirement. He said the design allows for fewer cross-streets and more "T" intersections which are safer, and reduces the amount of street paving necessary to serve the proposed development by about 38 percent when compared to typical layouts. This results in reduced costs for construction, maintenance, and snow removal; lower specials, less impervious area, less storm water runoff; and fewer cul-de-sacs, which are inefficient. He said most lots back up to open space and streets are less dominated by garages, due to the varied setbacks and curvilinear street layout.

Hill asked about traffic impacts of the coving design. Hoke indicated the curvilinear street layout helps to act as a traffic calmer and should reduce vehicle speeds and improve safety.

Rolley expressed concern about the large number of lots, 100 plus, along Northwing and the number of cars that will have to pass Lot 9 to get to their house to the north because there is no other access point.

Hoke said in the future there is potential access to Barn and Casement Roads to the north. However at this point in time, access is limited as there is no access to the west because of the private streets in Colonial Gardens and no access into the apartment community to the southwest. There is no access to the northwest into Valleywood, due to Riley County's concern about those substandard streets handling more traffic in that neighborhood. In meetings with the Township, County, City and emergency personnel, it was decided to allow a controlled emergency access at that location. He said it is a nine-phase development, and the northern end would be the last phase.

Diane Novak, 11330 Military Trail Road, St. George, asked about the Bicycle Master Plan and what accommodations for bicyclists have been made on the streets in the development, given that there will be parking on both sides of the streets. She asked how children will get to school and if there would be bike paths. She said sidewalks should not be used by bicyclists.

Hoke said that the 31-foot wide streets are the typical width in Manhattan and that there are no plans for bicycle paths. However, he said the common areas will be connected with about 4-foot wide shallow concrete pilot channels for the detention basins. He said these could be used by children during dry periods to shortcut through the common areas and not utilize the sidewalks.

Bunger said the proposed route shown in the Bicycle Master Plan for this area would be along Marlatt Avenue, which is not proposed to be annexed at this time. He said the policy statements in the Bicycle Master Plan indicate that local streets be used as "share-the-road" facilities. He said the interior streets of the development meet the policies of the Bicycle Master Plan and meet the engineering standards.

Ott said the minimum radiuses for curves have been met. He indicated that the Bicycle Master Plan identifies the Linear Trail along Marlatt Avenue and that the necessary right-of-way for the Linear Trail has been set aside on the south side of the Marlatt ditch. In addition, the County's construction of Marlatt Avenue includes a sidewalk along the south edge of Marlatt Avenue. The intersection of US 24 and Marlatt Avenue will include a Linear Trail tunnel under US 24 to accommodate pedestrians and bicycles. He said if in the future it is decided to provide bike lanes along the 31-foot wide streets in this development, then parking will need to be removed, so there are tradeoffs that will need to be considered.

Winslow added that it was the intent of the Bicycle Master Plan that on local streets it would be a shared use plan on low volume 31-foot wide streets and that bicycle traffic is allowed along with vehicular traffic. She said it doesn't necessarily warrant a separate bicycle lane.

Bunger said the proposed development meets the Comprehensive Plan, engineering designs and Bicycle Master Plan and does not warrant anything higher than a shared use approach.

Joe Knopp represented Mel Vanderstelt who owns the property to the east of the proposed development, which is zoned county industrial. He said there is an issue with sanitary sewer manholes in the area that are located in the ditch and have potential infiltration and capacity problems. He said adding this development to the system is an issue that the City will need to address at some point. He also addressed the status of Julie Lane, which has been dedicated across Mr. Vanderstelt's tract from Nelson's Landing and could give the residents on Nelson's Landing a second access out. He said there should be more than one way out of a development and connecting Julie Lane to the proposed development could address the block length issue in the development and provide a second access for Nelson's Landing. He said it is a policy issue that should be considered to not have each development stand alone.

Steven Jones, 1188 Julie Lane, said he agreed with Knopp that Julie Lane goes nowhere. He said they would like to be a part of the growth in the area and asked how soon the development would begin.

Greg Anders indicated the first phase of 31 lots would be done as soon as possible and the remainder would be based on market conditions.

Jones suggested waiting on the development, until the Marlatt Avenue improvements are completed. He questioned if there was a need for 286 more houses and asked if traffic impacts on the area have been considered. He asked when construction on the Marlatt Avenue - US 24 intersection would begin.

Ott said there is an October 2008 bid date to start construction of the intersection.

Jones asked that the development wait until the intersection is done. He said he has lived there for fourteen years raising three kids, one of which put a car in the ditch. He there a numerous accidents at that intersection and locating another 286 families in the area is playing Russian roulette. He asked that consideration be given to connecting Julie Lane to the proposed development, to provide a second access for Nelson's Landing.

Paul Irvine, 3370 Casement Road, expressed concern about drainage and the amount of water that will flow through his farm land. He appreciated the developers' and engineers' efforts and expense in addressing drainage and said that if it works like they say it will and the figures are accurate then things should be alright and not adversely affect neighbors. He said he is not opposed to the development if there is no reshaping, or modification that will be required on his land, and that water flows do not change as it goes across his property.

Responding to citizen questions, Hoke indicating the development will be phased starting with 31 lots, not all 286 lots at once. He said benefit districts still have to be formed and construction plans prepared, and that utilities and streets have to be put in which will all take time. He said Marlatt Avenue is to be completed in July, long before the development ties streets to it and the Marlatt intersection will be under construction. He said the timing of the development and Marlatt Avenue will be good. He said their traffic impact analysis determined that Marlatt Avenue and US 24 can handle the increased traffic and that levels of service will be good. He said they looked at connecting Julie Lane to the development; however it is bad planning to connect a single family neighborhood into an industrial zone. He said the connection also did not appear to be that much of a benefit to the Nelson's Landing neighborhood, as it would be a longer route to Marlatt Avenue.

Rolley closed the public hearing.

Hill said he was somewhat torn about making the Julie Lane connection; however he said it doesn't make sense to connect an industrial area to a residential area. He said the tract was not very usable as industrial and asked Knopp to comment.

Knopp said Mr. Vanderstelt has had the tract zoned industrial for a long time and was not sure what land uses would develop around it, so he didn't want to give it up. It's a very narrow strip between to residential areas and was once an air strip. He said they don't know what they will use it for, but that it is looking more likely to be used for residential, than for industrial. Drainage from Star Farms crosses the northern end of the tract and he was glad to hear that the proposed development could reduce that impact. Knopp said the tract has limited use, but that Julie Lane could help provide access. He was not asking Northwing to solve his development problems, but suggested the Board should consider access to adjoining tracts.

Hill agreed the Planning Board generally tries to provide connectivity and access between adjacent areas. However, he was concerned about potential impacts of an

industrial area connecting to a residential neighborhood. He said it didn't appear that the tract was wide enough to accommodate a street for residential development.

Meredith agreed with Hill's comments regarding Julie Lane connection.

Zilkie cited the Manhattan Zoning Regulation's restriction on access to commercial and industrial tracts from a residential area and noted a similar situation involving the Eureka Addition industrial park, which was required to plat no access onto an adjoining pre-existing public street in a residential area. He said the Subdivision Regulations have a strong emphasis on connectivity between adjoining areas and the proposed development does provide three future access points northward to the adjoining land and to Valleywood for the emergency access.

Rolley agreed it is a difficult issue to resolve. She appreciated the applicant's efforts to be creative and use concepts not familiar to the community. She is familiar with the coving technique and has concerns about access issues. She said the winding streets of the coving technique provide a reputation for good traffic calming and creating a certain quality of life. However, the varied setbacks typical of coving are not being emphasized very much in this proposal. She was concerned that over a hundred households would be traveling on Northwing, to a dead-end area at the north end of the development. She said future potential connections are provided, however the one existing connection point to Julie Lane is not being used as a through street, as requested by one of the residents in the area. She wanted to be supportive of innovative ideas, however was concerned about the impact on the health, safety and welfare of the community.

Hill asked if the applicant is opposed to connecting to Julie Lane.

Ott informed the Board that the western portion of the Julie Lane right-of-way is not actually a constructed street and would not connect to the site.

Hill said while he wanted to provide connectivity, he was concerned about the county's industrial zoning on the adjoining tract. He could not support the connection and agreed with the applicant and city staff.

Ott indicated that the specifications used for constructing Nelson's Landing were probably similar to those for Valleywood's streets. The Board may be faced with the same situation if the County Engineer says he doesn't want connectivity due to street conditions. Ott was concerned that the County Engineer has not has the opportunity to weigh-in on this issue.

Kohlmeier questioned if the Board could address the Julie Lane connection, if it is not brought as part of the application they are considering, beyond just saying the Board might consider looking at it in the future.

Hill agreed that the Board could not insure Julie Lane's connection to the proposed

development even if they approved of it.

Rolley said it is an annexation issue where many of the surrounding tracts are still in county and it will come up sooner or later. She asked for clarification between the front yard setbacks shown on the Preliminary Plat at 25 feet, and the diagram shown during the hearing with greater coving setbacks.

Hoke said the Preliminary Plat does not show the coving setbacks that are shown on the diagram and which are part of the private covenant deed restrictions. He said the City preferred that the greater “private setbacks” not be shown on the Preliminary Plat, since 25 feet is the minimum setback under the zoning.

Rolley said the coving setbacks are a big part of the design and asked if the restrictive covenants will be part of the Final Plat, so there would insurance that the coving setbacks would be followed.

Bunger said the covenants would be filed with the Final Plat, but they are private restrictions and not enforced by the City.

Rolley said that while it is the intention of the developer to follow the coving setbacks, they are not being required through the Plat. She said without following the setbacks that go along with the coving street layout, it results in bad developments which she has seen examples of in other communities.

Kohlmeier asked if the Board could make the coving setbacks a condition of approval of the Preliminary Plat.

Zilkie informed the Board that if it approves an unusual setback as a part of the Plat, the Board will need to cite the applicable section of the Subdivision Regulations it is relying on to impose the condition.

Rolley asked why the development was not proposed as a Planned Unit Development (PUD), so the varying setbacks could be required as part of the development.

Zilkie said the applicants had not proposed a PUD, which requires a much greater level of information to be submitted, including building and landscaping designs. He said they might be able to plat greater setbacks than required by the zoning district, but it would still be up to the developer to insure that homes are built accordingly. It still doesn't address the issue of conditioning approval of the Preliminary Plat.

Rolley said the applicant is asking for substantial variations from the Subdivision Regulations for the development and there needs to be insurance that the rational for the variations can be carried out. She asked how to insure that the proposed concept will actually be built.

Hoke said they are not opposed, if staff can identify a way to require that the greater

setbacks are followed.

Hill said there are many areas with restrictive covenants controlling development that have been approved, so the Board's condition could be to follow the covenant that is filed with the Final Plat.

Rolley said the covenants would only be enforceable by the residents in the development and not the city.

Cattell confirmed that the City usually is not a party to private covenants except in some specific situations where it needs to be party to them, such as with maintenance of drainage basins. Cattell said it is difficult for the Planning Board to require a Final Plat that doesn't conform with the Preliminary Plat. He suggested the applicant may want to submit a revised Preliminary Plat.

Rolley asked if the Board could approve the Preliminary Plat on the condition that a revised Preliminary Plat be submitted showing the coving setbacks.

Cattell said that conditions placed on the Preliminary Plat by the Board need to relate as best as possible to the variations necessary for the unique coving layout.

Zilkie suggested the Board could cite Section 10-301(A)(1) of the Subdivision Regulations relating to block configurations, which provides "for adequate building sites suitable for the special needs of the type of use contemplated".

Cattell suggested the applicants could submit a revised Preliminary Plat along with the Final Plat.

Anders agreed that was acceptable and that following the coving setbacks was a key to a successful development. They had planned to file the setbacks through the private covenant.

Cattell said the covenants would still need to be filed with the Final Plat, and that with submission of a revised Preliminary Plat showing the coving setbacks, the covenants would no longer conflict.

Hill moved that the Planning Board recommend approval of the annexation of the 106-acre tract of land for Northwing Addition, generally located north of Marlatt Avenue, based on the findings in the Staff Report and conformance with the Manhattan Urban Area Comprehensive Plan.

The motion was seconded by Ham and passed on a vote of 5-0.

Hill moved that the Planning Board recommend approval of the proposed rezoning of Northwing Addition from County G-1, General Agricultural District, to R-1, Single-Family Residential District, based on the findings in the Staff Report.

The motion was seconded by Kohlmeier and passed on a vote of 5-0.

Hill moved that the Planning Board approve the Preliminary Plat of Northwing Addition, based on conformance with the Manhattan Urban area Subdivision Regulations, with the two conditions recommended by City Administration (i.e. 1. The requested variations shall be approved; 2. Northwing Addition shall be annexed and rezoned as proposed), and adding a third condition that: to insure the development is carried out as proposed, a revised Preliminary Plat shall be submitted with the Final Plat reflecting the coving setbacks that are necessary to provide adequate building sites, as per Section 10-301(A)(1) of the Subdivision Regulations.

## **PROJECT CHRONOLOGY NORTHWING ADDITION**

- April 21, 2008      Manhattan Urban Area Planning Board holds public hearing and considers annexation, rezoning and Preliminary Plat of the Northwing Addition. MUAPB recommends approval of annexation and rezoning to R-1 District, and approves Preliminary Plat with three conditions.
- May 6, 2008      City Commission approves first reading of ordinances annexing and rezoning of the Northwing Addition.

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