City of San Marcos

Special Called Meeting - Final-Amended
City Council

Tuesday, December 5, 2017 3:00 PM City Council Chambers

630 E. Hopkins - City Hall Conference Room
Work Session & Executive Session

I. Call To Order

II. Roll Call

PRESENTATIONS

1. 3:00PM Receive a Staff Presentation and update regarding the following, and provide direction to Staff:
   1. Flood Mitigation Strategies
   2. Status at Texas Water Development Loan for acquisition of property over the Edwards Aquifer Recharge Zone
   3. Prioritization of properties to be acquired for flood mitigation purposes

EXECUTIVE SESSION

2. Executive Session in accordance with Section §551.072: Real Property - to receive an update and deliberate regarding the purchase of Certificate of Convenience and Necessity (CCN) and real property; and to receive an update and deliberate regarding the purchase of undeveloped property over the Edwards Aquifer Recharge Zone to mitigate nonpoint source pollution to the Edwards Aquifer and the San Marcos Springs and River.

3. Consider adoption or direction to Staff on matters discussed in Executive Session.

III. Question and Answer Session with Press and Public.

IV. Adjournment.

V. ADDENDUM

The caption on Item #1 was expanded and reposted. It was previously posted as:
3:00PM Receive a Staff Presentation and Update regarding the Texas Water Board, and provide direction to Staff.

The caption on Item #2 was amended and reposted. It was previously posted as:
Executive Session in accordance with Section §551.074 of the Texas Government Code: Personnel Matters - to discuss and provide update on Meet and Confer; and in accordance
with Section §551.072: Real Property - to receive an update and deliberate regarding the purchase of Certificate of Convenience and Necessity (CCN) and real property.

ADDENDUM POSTED ON THURSDAY, NOVEMBER 30, 2017 @ 3:30PM

JAMIE LEE CASE, CITY CLERK

Notice of Assistance at the Public Meetings

The City of San Marcos does not discriminate on the basis of disability in the admission or access to its services, programs, or activities. Individuals who require auxiliary aids and services for this meeting should contact the City of San Marcos ADA Coordinator at 512-393-8000 (voice) or call Texas Relay Service (TRS) by dialing 7-1-1. Requests can also be faxed to 855-461-6674 or sent by e-mail to ADArequest@sanmarcostx.gov
AGENDA CAPTION:
3:00PM Receive a Staff Presentation and update regarding the following, and provide direction to Staff:
  1. Flood Mitigation Strategies
  2. Status at Texas Water Development Loan for acquisition of property over the Edwards Aquifer Recharge Zone
  3. Prioritization of properties to be acquired for flood mitigation purposes

Meeting date: 12/5/2017

Department: Engineering

Amount & Source of Funding
Funds Required: N/A
Account Number: Click or tap here to enter text.
Funds Available: Click or tap here to enter text.
Account Name: Click or tap here to enter text.

Fiscal Note:
Prior Council Action: Resolution approving submission of TWDB loan application

City Council Goal: [Please select goal from dropdown menu below]
Goal #9 Protect & Preserve San Marcos River and Edwards Aquifer Recharge Zone

Comprehensive Plan Element(s): [Please select the Plan element(s) and Goal # from below]
☐ Economic Development Choose an item.
☒ Environment & Resource Protection Choose an item.
☐ Land Use Choose an item.
☐ Neighborhoods & Housing Choose an item.
☐ Parks, Public Spaces & Facilities Choose an item.
☐ Transportation Choose an item.
☐ Not Applicable

Master Plan: [Please select the corresponding Master Plan from the dropdown menu below (if applicable)]
Habitat Conservation Master Plan

**Background Information:**
Staff will provide follow up on Council direction provided at the September 19th City Council meeting.

**Council Committee, Board/Commission Action:** Click or tap here to enter text.

**Alternatives:**

**Recommendation:**
CITY COUNCIL MEETING
ITEM #1 - WORKSHOP

Tuesday, December 5, 2017
Goal of the Workshop:

- Follow up on Council requests
- Additional information

Council Direction on Dec 19th on TWDB Loan
How did we get here?

- **Feb 2017:** San Marcos River Foundation property acquisition request.

- Council direction to submit to Texas Water Development Board (TWDB) for Non-Point Source Pollution Prevention project.

  - *Non-Point Source Pollution* = pollution that occurs as a result of storm water runoff from urban development.

- Submittal based upon protection of water quality in Edwards Aquifer, San Marcos River and Springs.

- Focused on development impacts to Sink Creek.

- Conservation acquisition identified as a NPSPP strategy.
Background continued:

- **August 2017:** TWDB invites City to submit loan application up to $4.4M with 30% loan forgiveness.

- **$4.4 Million:** SMRF price (2 tracts) with budget for contingency and closing costs.

- **September 2017:** Resolution from Council required for loan application.

- **September 5th and September 19th discussion on:**
  - On-going maintenance costs after acquisition.
  - What about previous and in process acquisitions providing for water quality?
  - Could these parcels provide for flood mitigation?
  - Bring outside funding to reduce City acquisition cost.
Council Action:

- Approved resolution to submit Non-Point Source Pollution Prevention loan application.
- Requested prioritized list of flood mitigation properties.
- Requested SMRF additional grant
Loan Application:

- Millican Tract
- Geiger Tract
Additional Information on Flood Mitigation
Best Practices

Presentation by Troy Dorman, Ph.D, P.E., Director, TetraTech
Flood Mitigation Strategies

City of San Marcos – Council Workshop
Setting Values on the Purchase

• What are the best practices “Flash Flood Alley” cities use to mitigate flooding?

• What usage of the land provides the most flood mitigation benefit?

• Are there benefits in purchasing Edwards Aquifer Recharge Zone land (to prevent future development) for flood mitigation downstream?

• Is it more beneficial to obtain land for flood control projects such as a detention to reduce flow rate or channel improvements to increase conveyance?
Current San Marcos Flood Control Policies

• Strong Floodplain Ordinance in place to prevent development impacts.
  ▪ No increase in water surface elevation off-site.
  ▪ Must prevent flotation, collapse, or lateral movement of the structure.
  ▪ Must have the lowest floor elevated to a minimum of two feet above the base flood elevation.
  ▪ No loss of floodplain storage.
  ▪ A floodplain buffer extending beyond the existing floodplain limits.

• Stormwater facilities shall intercept and transport runoff from a 25-year frequency storm.

• The stormwater system shall convey those flows greater than a 25-year frequency, up to and including a 100-year frequency storm within defined rights-of-way or drainage easements.
Setting for Decision Making

- What are we trying to prevent or what infrastructure are we trying to protect?
  - Flooding
    - Existing Homes and Business
    - Offset other policies that don’t require flood mitigation
      - Regional facilities or Master planning for higher density
  - Stream protection/restoration
    - Buffer zones
    - Reduced erosion
  - Water Quality

- Integrated Stormwater Management
  - Reduce flow/volume
  - Increase Capacity
Development Impacts: Runoff

45% Increase in Runoff
“It is important to note that watersheds can only be comprehensively restored (protected) by installing practices in upland areas, the stream corridor, and in appropriate settings, within the stream itself.”

Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects  Urban Stormwater Work Group Chesapeake Bay Partnership
Mitigation Strategy #1

Preserve Open Space

- Can create park land and habitat.
- Will not mitigate existing flooding.
- Even 95% watershed preservation may not mitigate flooding of at risk construction.
Mitigation Strategy #2

Build Detention – Regional or Distributed

- Regional Facilities
  - Smaller Footprint
  - Focused maintenance

- Distributed Detention
  - Augmented Natural Systems
  - Provide recharge
  - Create habitat
  - Distributed Maintenance

<table>
<thead>
<tr>
<th>Option B</th>
<th>Target Peak Discharge: Pre-Project 100-YR flow [cfs]</th>
<th>100-YR Peak Discharge Post-Project w/ Dam Option B [cfs]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klingemann Street (Hydrologic Node BCJ240)</td>
<td>7,898</td>
<td>6,383</td>
</tr>
</tbody>
</table>
Mitigation Strategy #3

Increase Capacity

- Channelization leads to higher maintenance
- Can push the flooding problem downstream with unforeseen consequences.
- Increased capacity through land acquisition creates opportunities for stream restoration, linear parks, and stream protection.
Summary

• Flood Mitigation Strategies must take into account watershed conditions including existing and proposed land use.

• Flood mitigation is only part of the Integrated Stormwater Management approach that best protects stream health and manmade infrastructure.

• Detention (especially off-channel) is typically the most effective for existing flooding problems.

• Channelization can eliminate flooding in small areas but can create more problems, especially when used throughout a watershed.

• Methods that provide resiliency (stream protection, buffering, land use controls, and onsite detention) are best for the long term stability of a city (and fiscal sustainability).
Flood Mitigation Property Prioritization Process & Outcomes
• **Goal:**
  To prioritize property acquisitions for flood mitigation.

• **Stakeholder Process**

• **Facilitated by Andy Sansom, Ph.D of the Meadows Center**

• **Participants:**
  Dianne Wassenich, SMRF
  Bill Bunch, SOS Alliance
  Todd Derkacz, Greenbelt Alliance
  Nancy Nusbaum, TxState
  Bert Lumbreras
  Collette Jamison
  Steve Parker
  Rodney Cobb
  Laurie Moyer, P.E.
  Brian Reis, P.E. LAN
Process:

• Parcel list developed by City’s Grant Coordinator:
  – San Marcos River Foundation parcels
  – Multi Purpose parcels previously identified for grant acquisition
  – Project parcels

• Added 20 parcels:
  – Potential for stormwater management projects (quantity & quality)
  – Potential for regional detention/recharge
  – Potential for development in flood prone area and could meet other City goal.

• Mapping of parcels with Meadows Center High Priority Conservation Areas
HIGH PRIORITY CONSERVATION AREAS  (WITH PROPERTIES OF INTEREST)
Prioritization Matrix

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
<th>Criteria</th>
<th>Point Range</th>
<th>Measurement or Criteria</th>
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<tbody>
<tr>
<td>Developability</td>
<td>40%</td>
<td>Is the property undeveloped?</td>
<td>0-2</td>
<td>2-undeveloped, 1-some dev, 0 - developed</td>
</tr>
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<td>Is the property in the floodplain?</td>
<td>0-2</td>
<td>2-more than 50%, 1-less than 50%, 0-outside</td>
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<td>Is the property attractive for development (is there an urgency to acquire)?</td>
<td>0-2</td>
<td>2-city pre-dev mtgs held, 1-interest, 0-no</td>
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<td>Can the parcel stand alone or does it need to be part of a group of tracts to be effective?</td>
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<td>Would property potentially be given as development mitigation?</td>
<td>0-2</td>
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<td>City Objectives</td>
<td>40%</td>
<td>Does the property support other City infrastructure goals (transportation, parks, etc)?</td>
<td>0-2</td>
<td>2-multi, 1-yes, 0-no</td>
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<td>Does this property fall within a special water quality area?</td>
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<td>Availability</td>
<td>20%</td>
<td>Is the parcel on the market for sale or has a willing seller?</td>
<td>5</td>
<td>5-yes, 0-unknown/no</td>
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<td>Is the entire parcel needed? If not does remainder provide for other City use (e.g. affordable housing, etc.)</td>
<td>0-5</td>
<td>5-all needed, 2-5-some, 0-no with no other use</td>
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- More detailed prioritization analysis by City Staff for flood mitigation.
- Eliminated tracts associated with DR Blanco Riverine Project
- Higher ranked parcels on Purgatory Creek
- Many higher ranked parcels without “willing seller” information
- Discussion about higher weight for “willing seller”
- Point range increased from 2 to 5 for criteria in Availability category
Prioritized Flood Mitigation Parcels

- Parcels tiered 1-3 based upon score.
- Higher priority parcels on Purgatory Creek.
- Direct water surface reduction for currently impacted properties.
- Support multiple Mitigation Strategies.
- Cottonwood and Willow Creek parcels - future regional solutions.
- Sink Creek provide for future detention with direct water surface reduction.
- Road map for strategic acquisitions.
Stakeholder Process Outcome:

- Prioritization process solely for flood mitigation scored conservation parcels as a lower priority.
- The “conservation” tracts should be considered not only based on potential flood mitigation, but also water quality, open space and recreation.
- Recommended Tier 1 properties include conservation considerations.
- Some conservation development opportunity would allow economic activity to occur on one or more of the tracts which could provide revenue to either created endowment for operations and maintenance or help pay off the loan.
Additional Funding:

- There is definitely philanthropic interest in the project, particularly because:
  - Considering both the flood mitigation and conservation tracts, it would essentially fulfill the vision of a greenbelt surrounding the central core of the city.
  - San Marcos is dead center of one of the fastest growing communities in the United States and the opportunity will not last.
TWDB Loan Status:

• Application for Millican and Geiger properties for Non-Point Source Pollution Prevention Loan

• These parcels were not high scoring solely for Flood Mitigation

• Application still under Technical Review

• Need to identify all allowable uses on property

• Up to $4.4M loan with 30% Disadvantaged Community Loan forgiveness
  – Potential additional forgiveness for Green Project Reserve
  – City debt limitations

• Outside funds reduce TWDB loan amount.
Goal of the Workshop:

- Follow up on Council requests
- Additional Information

Council Direction on Dec 19th on TWDB Loan
Questions/Discussion
Workshop Timeline
City Hall Conference Room
December 5, 2017

- 3:00 to 3:05  Introductions
- 3:05 to 3:15  Workshop Goal & Background
- 3:15 to 3:30  Flood Mitigation Best Practices
  Dr. Troy Dorman, P.E., CFM, Director, TetraTech*
- 3:30 to 3:55  Flood Mitigation Property Prioritization Process & Outcome
- 3:55 to 4:00  TWDB Funding & Status of Additional Funding
- 4:00 to 4:45  Questions/Discussion
Troy Dorman, Ph.D., P.E., CFM – Short Bio

Troy Dorman, Ph.D., P.E., CFM is a Director for Tetra Tech in San Antonio, Texas. He is a graduate of Texas Tech University (Water Resources and Environmental Engineering) and Tarleton State University (Hydrology). Dr. Dorman has over 19 years of professional experience with a focus on sustainability, hydrology, and water resources for public and private clients. As an engineer, Dr. Dorman strives to understand the economic, social and environmental constraints of every project with the goal of maximizing the benefits for the community and the client.

Dr. Dorman serves as one of the leaders of Tetra Tech's Integrated Watershed Management business practice. His roles include client development/management, project management, technical leadership and Quality Control officer. Dr. Dorman works with states, counties, cities, river authorities and the federal government on planning, infrastructure, and environmental engineering concerns. Dr. Dorman is currently leading projects in California, New Mexico and Texas while consulting on projects in China.
Code References from Troy Dorman Slides:

- Developments cannot increase the water surface elevation off-site unless contained within a dedicated drainage easement or right-of-way (Land Development Code §3.9.1.1.B.3)
- All new construction and substantial improvements must be designed or modified and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy (City Charter §39.041)
- All new construction or substantial improvements of residential and non-residential structures within the floodplain must have the lowest floor elevated to a minimum of two feet above the base flood elevation (City Charter §39.043.2-3)
- The increase in discharge due to the loss of storage shall be accounted for in all reclamation analyses (City Charter §39.043.10)
- A floodplain buffer will extend beyond the existing floodplain limits to the ground elevation matching the base flood elevation plus the required freeboard of two feet. (City Charter §39.046.4)
- All drainage facilities shall be designed to intercept and transport runoff from a 25-year frequency storm. The drainage system shall be designed to convey those flows greater than a 25-year frequency, up to and including a 100-year frequency storm within defined rights-of-way or drainage easements (Land Development Code §3.9.1.1.E)
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