

Summary of policy changes and recommendations to improve stormwater management

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Current Situation

- Codified preference for developers to pay a fee in-lieu-of versus detention on site which is used to assist the City to build large regional facilities.
- Stormwater utility fees continue to increase and used primarily for street sweeping, dredging and new facilities versus eliminating sources of NPS pollution.
- Increased property taxes are used for more flood control projects which includes greater use of concrete exacerbating water quality issues and litter nuisance.
- New bonds are issued every 5 years for additional flood control projects.
- Tax payers are paying for more than their share.
- Codes, project designs and practices do not reflect water quality.

Regional detention within Huebner Creek at Bandera



Goals of recommended changes:

1. *Prevent additional flooding from new development and incentivize more sustainable stormwater management measures.*
2. *Increase implementation of guidelines set forth in the Master Plan Policies (1997), the Comprehensive Master Plan Framework (2010), SA2020 (2011), SA Tomorrow Comprehensive Plan (2016) and any subsequent stormwater management and water quality goals.*
3. *Remove all segments of San Antonio's streams and rivers from the State's list of impaired water bodies while meeting and exceeding the City's MS4 permit requirements.*
4. *Insure that taxpayers are not picking up any portion of the bill for new development's stormwater requirements.*

The Preserve at Castle Hills by Meritage Homes in District 9



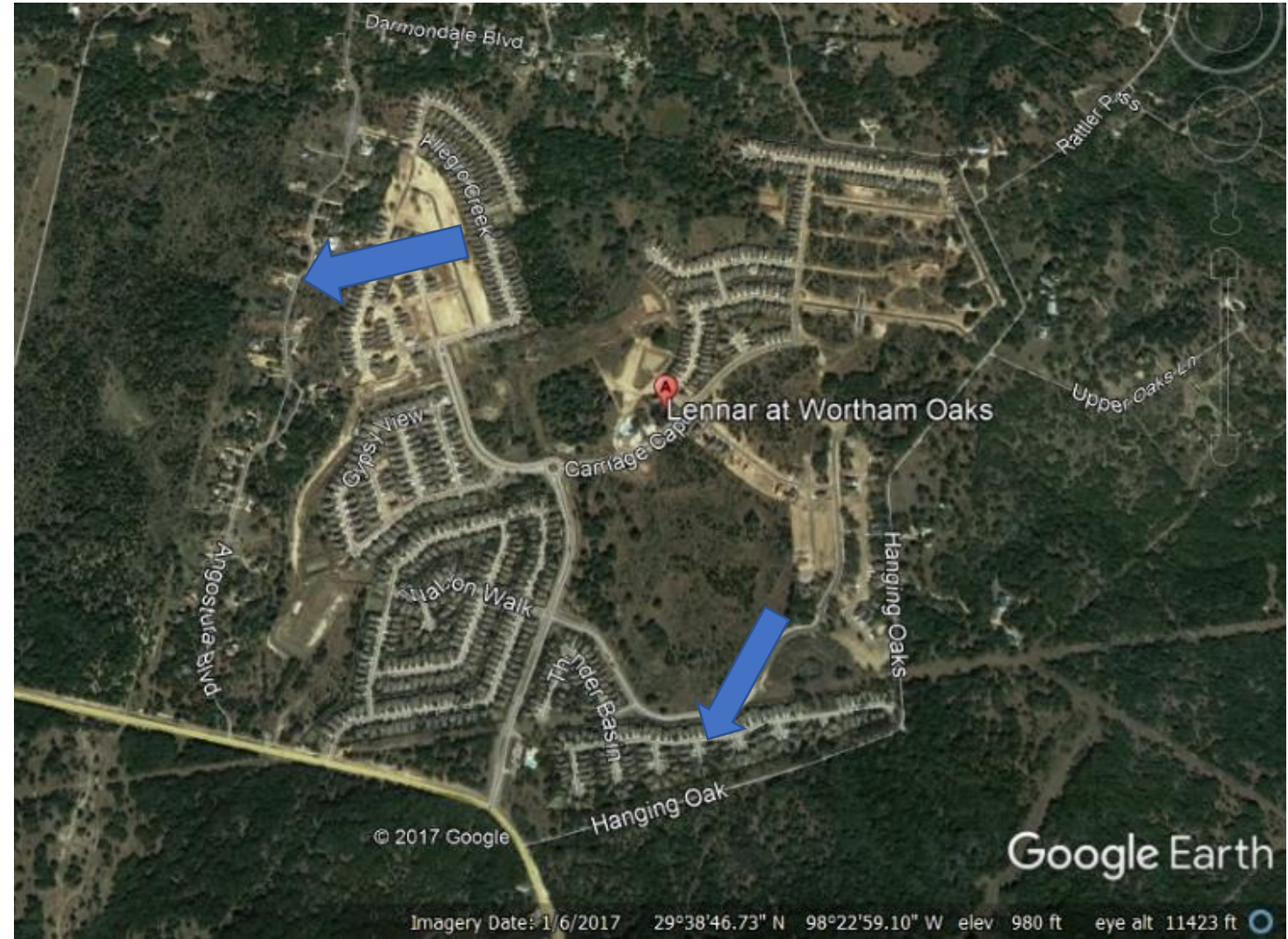
1. Flooding incidences continue to occur directly downstream from new development built under current rules.

This issue is in litigation by a Castle Hill resident.



1. Flooding incidences continue to occur directly downstream from new development built under current rules.

Wortham Oaks developed by Gordon Hartman in the ETJ and built out by a variety of builders.



2. Floodplains maintained in a “natural” state has been cited as a goal in every city planning document since 1997.

When kept in a natural state, floodplains provide flood control and water quality benefits, but current practices do not reflect this goal.

a. Variances to the Tree Preservation ordinance where trees in the floodplain are protected: significant trees at 80% and heritage trees at 100% preservation.

- By ordinance, variances to the Tree Preservation ordinance must go before the Planning Commission.
- In 2017, ten variances were requested and approved on a site basis to allow removal of trees in the floodplain.
- There are no records available for other administrative variances given that may have impacted floodplains and their stormwater.

a. A Tree Ordinance variance site at the Medina River for the construction of a railroad bridge.

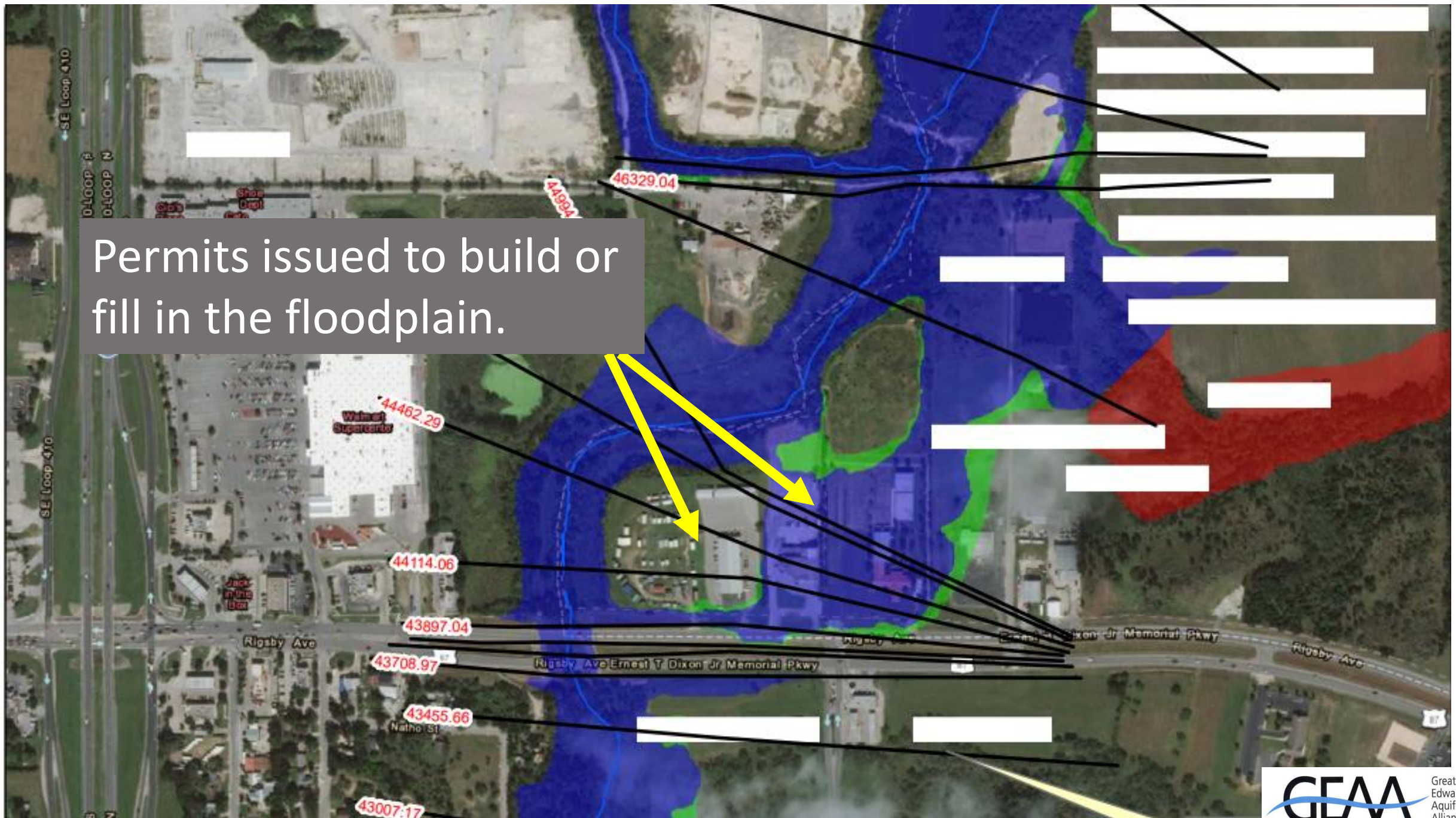


Floodplains maintained in a “natural” state continued

b. Floodplain development permits are allowed in the current code;

- 1) In fiscal year 2017, 389 floodplain development permits were issued.
- 2) Justification is based again on calculations that may indicate no impact to “base flows” (2,000 ft downstream) while there may be impact to flood stage flows when a stream or river is out of its banks.
- 3) Calculations do not consider impact to a stream’s ecology or its water quality.
- 4) **Current code does not enable staff to review for water quality and or ecological impact.**

Permits issued to build or fill in the floodplain.



Floodplains maintained in a “natural” state continued

c. Flood control strategies continue to be developed and implemented using concrete, tree removal and floodplain manipulation.

- 1) Often stream bank or water quality remediation is not included.
- 2) Even today, the tree survey is not considered until the project is near design completion. The City relies on the ordinance’s exemption for trees in floodplains.
- 3) These practices often results in:
 - a) Greater loss of tree canopy and its associated benefits to reduce stormwater runoff and improve water and air quality,
 - b) Increased cost for unnecessary mitigation that will be required by the Corps of Engineers.

Barbara Drive Drainage project did not use natural channel design, exacerbating the existing negative impact to Olmos Creek.





These 2 concrete channeled streams will drain directly into the "natural" flood plain of Olmos creek

Olmos Creek debris removal operation uses a Hydro-ax.

Over\$40,000 was spent to cut down riparian understory vegetation along Olmos Creek. This is now scheduled to occur every 4 years. What will be the results?

- Increased flooding downstream,
- Soil loss and degradation resulting in loss of CO2 sequestering capability,
- Increased losses of:
 1. Water and air quality,
 2. Biodiversity and habitat resulting in an increase in a monoculture of Giant ragweed and Johnson grass where more mowing will be required for “aesthetics”.





3. Every major stream and river monitored in the San Antonio area has segments of impaired water that does not meet state or federal requirements.

- One of the greatest issues is the bacteria count in our streams and rivers.
- Pet and animal wastes are the biggest contributors.
- Removing the riparian understory increases the opportunity for this material to enter streams and rivers without remediation.

Although water quality is cited as a major goal in San Antonio's planning documents, flood control projects and routine maintenance operations are not designed to meet this goal due to the lack qualified personnel on staff.



Brackenridge park and
Olmos baseball field



Mowing in floodplains

Mowing occurs within City Park riparian areas resulting:

- Increased flooding downstream and exacerbating loss of water and air quality benefits,
- Loss of bank stabilization and increased pollution from runoff and soil erosion,
- **Violations issued to the City by the Corps of Engineers, jeopardizing citizens ability to receive FEMA flood assistance.**



Restoration and best management maintenances practices are required to re-create healthy streams and wetlands.

d. Taxpayers' dollars are being used to assist in bringing floodplain property out of the floodplain for development.

- Beitel Creek – the creek is rerouted and part of the flood plain will be “reclaimed” to make a parking lot.
- This private enterprise was folded into the 2017 Beitel Creek bond project where the City will contribute up to 2.5 million and allow tree removal without mitigation .



4. Taxpayers continue to pick up storm water costs for development as indicated by the above and by the cap placed on Stormwater utility fees shown in the next column.

- By capping fees, those facilities with the greatest amount of impervious cover are not paying their share of what is needed to maintain current infrastructure and to assist the city in meeting its clean water goals and federal MS4 permit requirements.

<u>TOP 10 ACCOUNTS¹</u>	<u>REVISED</u>	<u>PREVIOUS</u>
Port SA	\$19,600	\$61,200
FL Sam Houston	\$13,600	\$77,100
AT&T Center (County)	\$4,100	\$10,000
Sea World	\$4,000	\$12,300
Toyota	\$3,900	\$24,000
Port SA	\$3,700	\$11,300
Southwest Research	\$3,600	\$14,900
SA Airport (City)	\$3,400	\$8,400
Lackland AFB	\$2,800	\$13,100
SA Airport (City)	\$1,800	\$4,600

¹Entities may have multiple accounts in addition to those listed

5. Effective stormwater management requires action by all municipal, county, regional and state departments.

- a. While LID has been discussed by the city since 2007, it was only adopted on a voluntary basis in the last UDC revisions of 2015. To date, there have been less than a handful of private and public projects that have incorporated some LID aspects.
- b. The FILO fee option is currently more economically feasible for private properties and the process is well defined to reduce review time therefore there is little incentive to utilize LID. There may also be conflicting interpretation regarding the implementation thus, increasing review times also resulting in a disincentive to utilize the option.
- c. While the City is moving to include some water quality practices, it is still not the norm and education is lacking.
- d. Ecological impact assessments for City projects do not include quantifiable impact to air and water quality and ecosystem services.

Recommendations:

- Regional water quality/Green infrastructure plan that includes Low Impact Development (LID)⁴, natural channel design and constructed wetlands will identify those locations for implementation to gain the highest water quality improvement (including litter reduction).
- Require for new development a minimum of on-site detention for 25yr event that includes a water quality component and fees to support future inspections.
- Add an additional factor in “run-off” calculations to consider individual site conditions.
- Develop a policy that approval to code variances impacting stormwater and water quality is the exception not the rule.
- Add a feature to the City’s building permit software that documents administrative variances, so they are recorded, and results can be evaluated to determine if code modifications are needed.

Recommendations continued

- Empower the Transportation and Capital Improvement Projects Dept. (TCI) staff to have review purvue by a new position to be created, *fluvial geomorphologist /ecologist* to determine impact beyond base flow.
- Ensure that Stormwater review staff and inspectors are trained to fully implement and facilitate LID and natural channel design to increase their effectiveness in working with consulting engineers.
- Direct staff to minimize impact to riparian areas, including native understory trees, during all projects and maintenance operations. Training will be required.
- Require that tree surveys are used in the initial design phase to assist in reduction of ecological impact and Corps of Engineer mitigation on all flood control projects.

Recommendations continued

- Require future City Council members to receive a briefing on this aspect of flood control operations so they can better direct and support improved practices.
- Eliminate the ability to obtain flood plain development permits and compensate property owners for development limitations.
- Approvals for use of tax payers' dollars to assist to “reclaim” flood plain requires a thorough financial analysis that includes long term impact, stormwater management, water and air quality considerations.
- Ensure that a water quality component is included in all municipal projects and any projects where City funds will be used – even after construction documents have been approved.

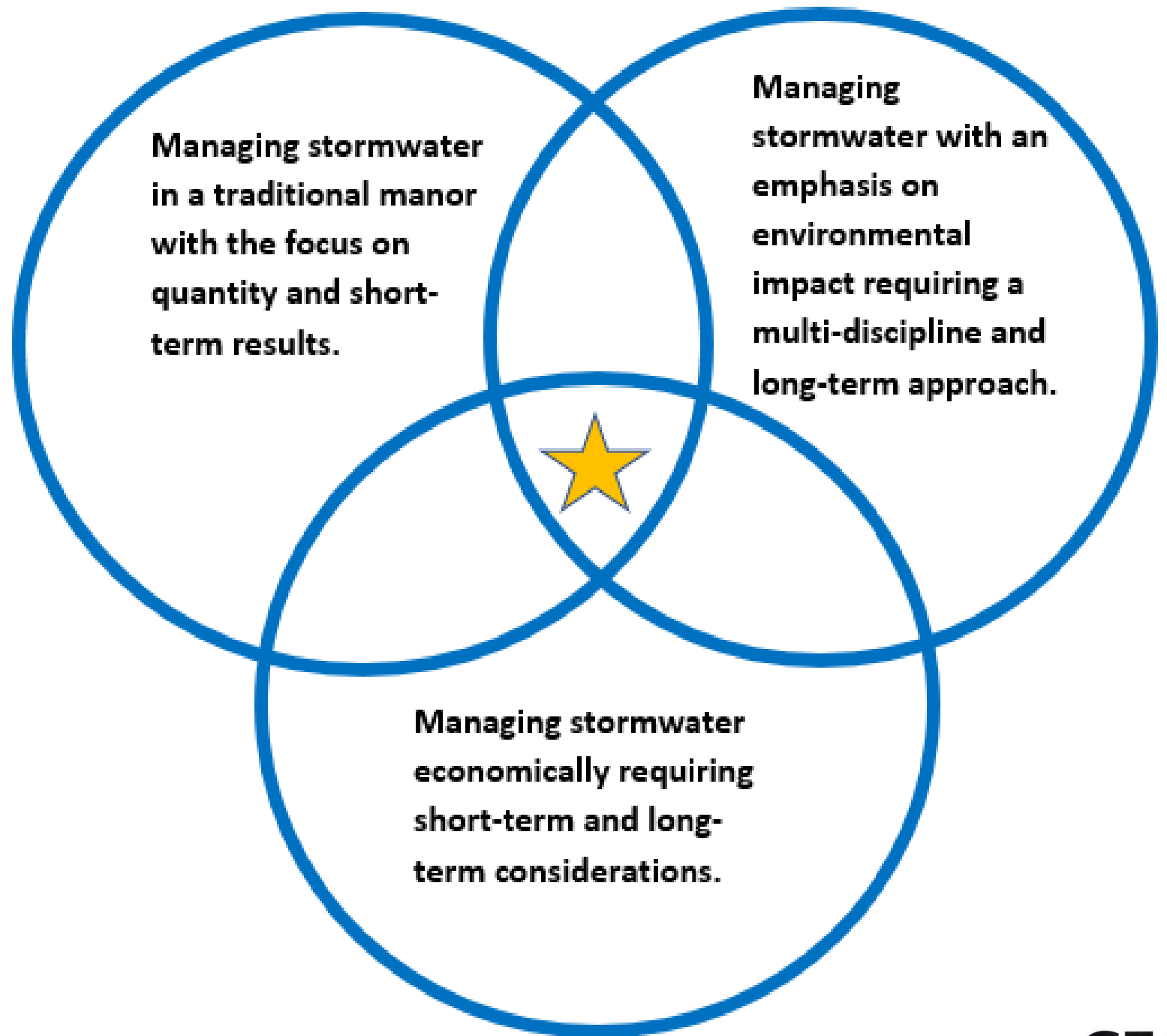
Recommendations continued

- Utilize Stormwater utility fees for gap funding and installing retrofit water quality/debris collection components at major discharge points before the stormwater enters a “natural” stream eliminating some maintenance operation that currently rely on heavy equipment in channels .
- Develop a maintenance policy and train staff (especially SAPAR/public golf courses, etc.) to maintain a riparian buffer of trees and vegetation that is kept at a minimum height of 6” high or greater. Utilize interpretive signage to educate the public on the purpose of “grow it and slow it - no mow zones”.
- Ensure that developments are assessed according to their impact on the City’s stormwater infrastructure. Offer credits where property owners retrofit to reduce their stormwater discharge and/or improve water quality as an economically feasible option.

Recommendations continued

- Every public (and private) project or policy should be reviewed not only for stormwater quantity, but for water and air quality and its impact to ecological resiliency.
- Support TCI in their water quality goal to enable children to safely play in our streams and rivers again by providing the political will.
- Contact your Council person to assist in making this happen within the 2020 UDC revisions.
- Explain that Water quality goals have not been realized even though this has been a goal in planning documents approved/adopted by City Councils. This is especially important with the greater understanding of the congruence between this goal and climate resiliency.
- Understand that there will be compromises as we seek the “Sweet Spot” to meet air and water quality and all agencies and citizens will be asked to participate.

The “Sweet Spot” for Stormwater Management



Top 8 Recommendations

- Require on-site detention with a water quality component.
- Develop a policy that variances are the exception not the rule
- Review criteria for issuing flood plain development permits especially those “reclaiming” private property.
- Create and fund a new TCI position for a fluvial geomorphologist/ ecologist to have review over pertinent private and public projects.
- Require that TCI use tree surveys at the initial design phase and include a water quality component while promoting the use of LID, natural channel design and constructed wetlands.
- Direct staff to modify maintenance practices especially along streams, etc. to reduce use of equipment while promoting, “grow it – slow it”.
- Require new City Council persons to receive a briefing on these aspects of flood control and maintenance practices.
- Insure that taxpayers are not picking up costs for commercial developments through bond issues, property taxes, Stormwater Utility fees, etc.

The Ira Lee Flood Control Project
emptying into Salado Creek

**Thank you for your interest,
consideration and feedback
on these issues!**