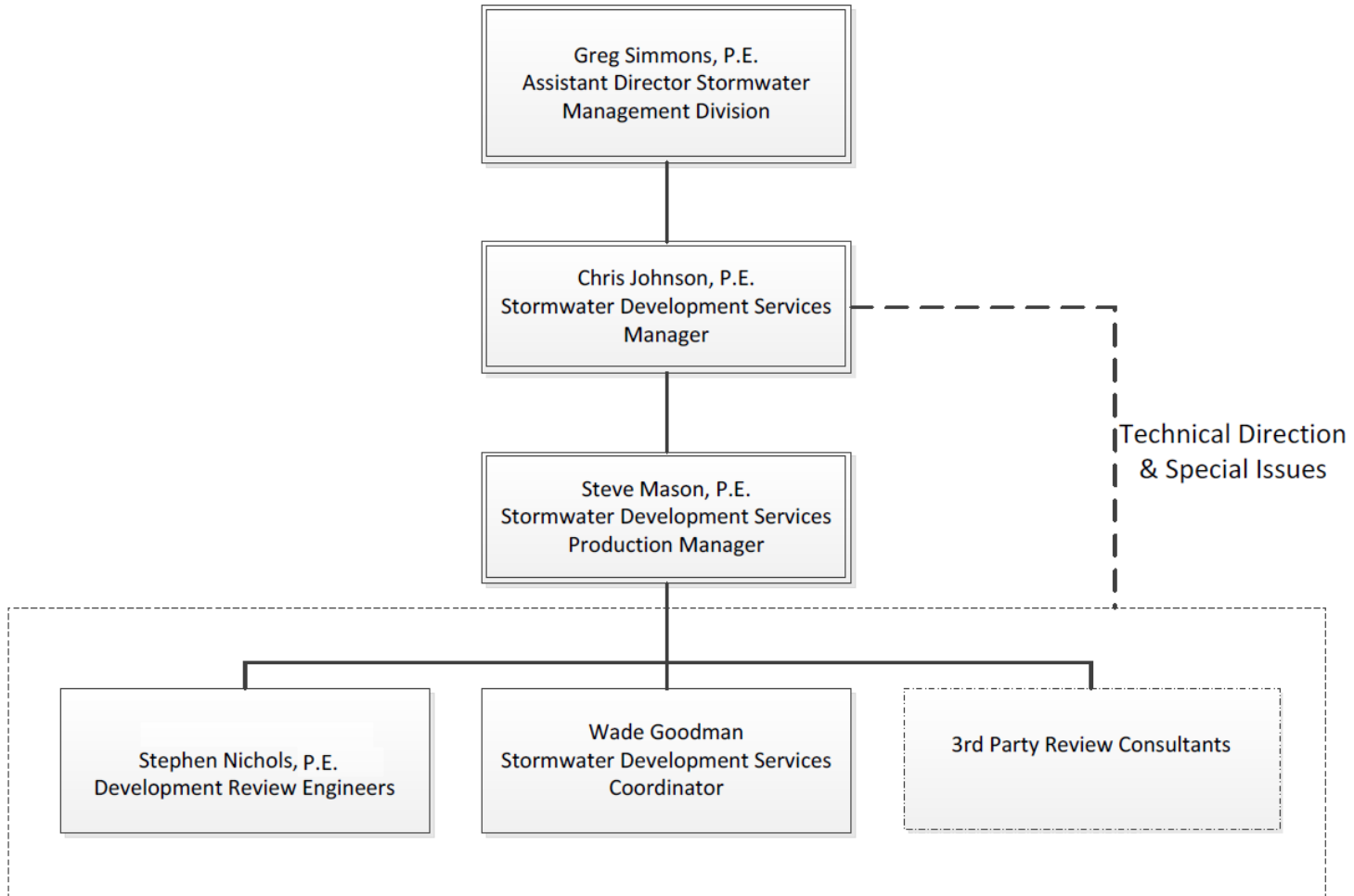


# Stormwater Development Services (SDS): An Overview



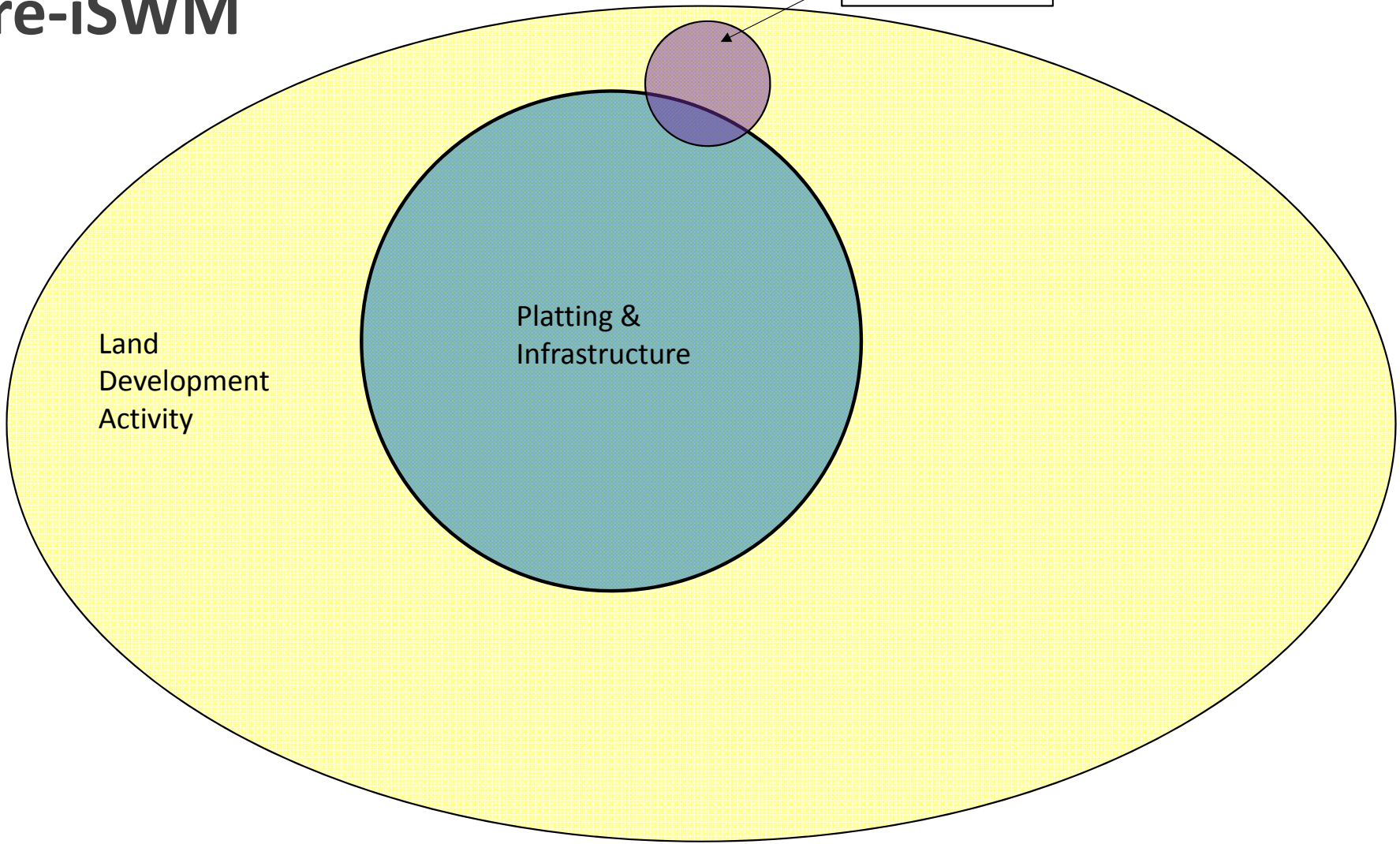
Presented by  
Stephen G. Nichols, P.E.,  
Transportation & Public Works Department,  
Stormwater Management Division  
February 24, 2017

# Org - Chart



# Pre-iSWM

Miscellaneous

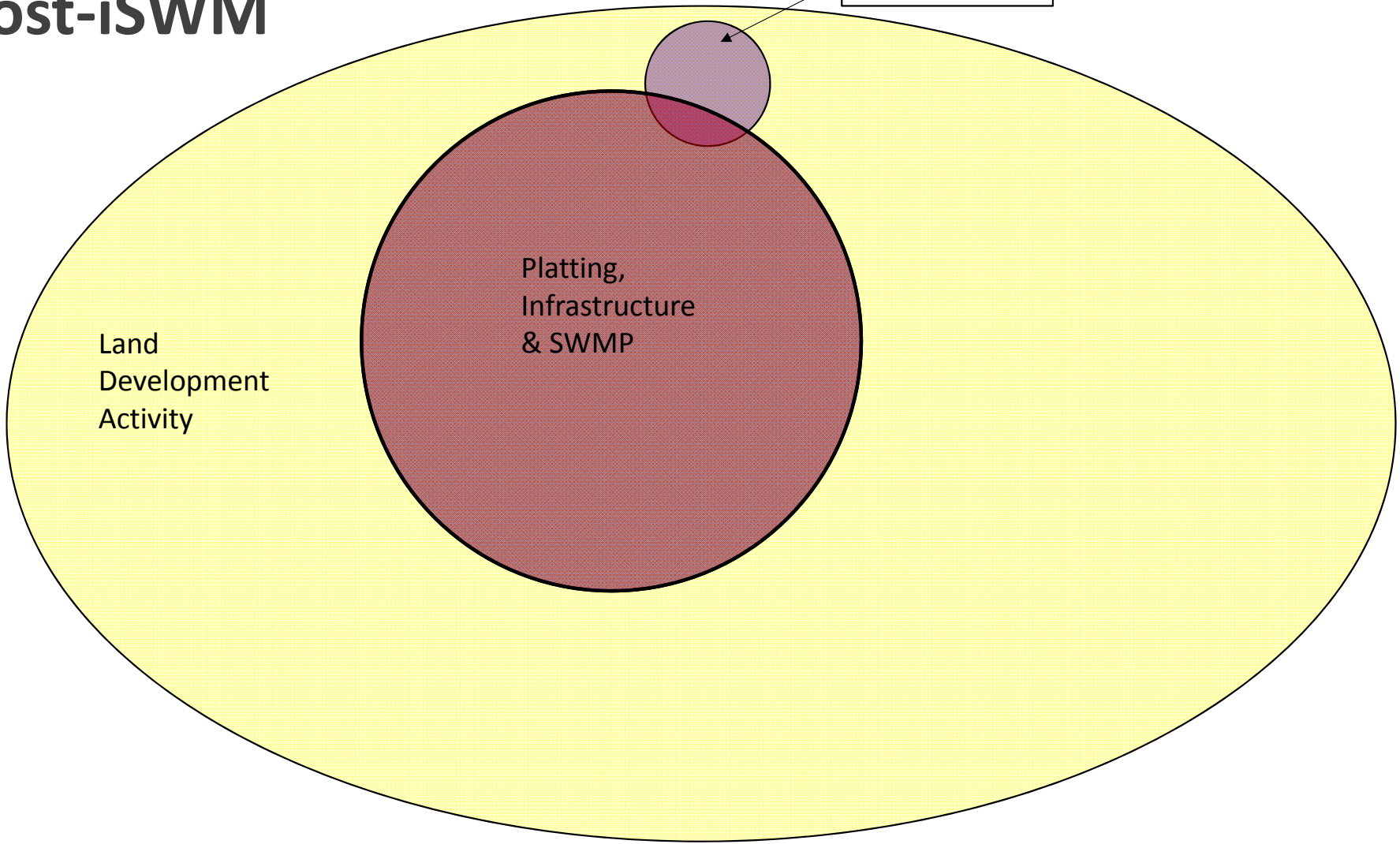


Land  
Development  
Activity

Platting &  
Infrastructure

# Post-iSWM

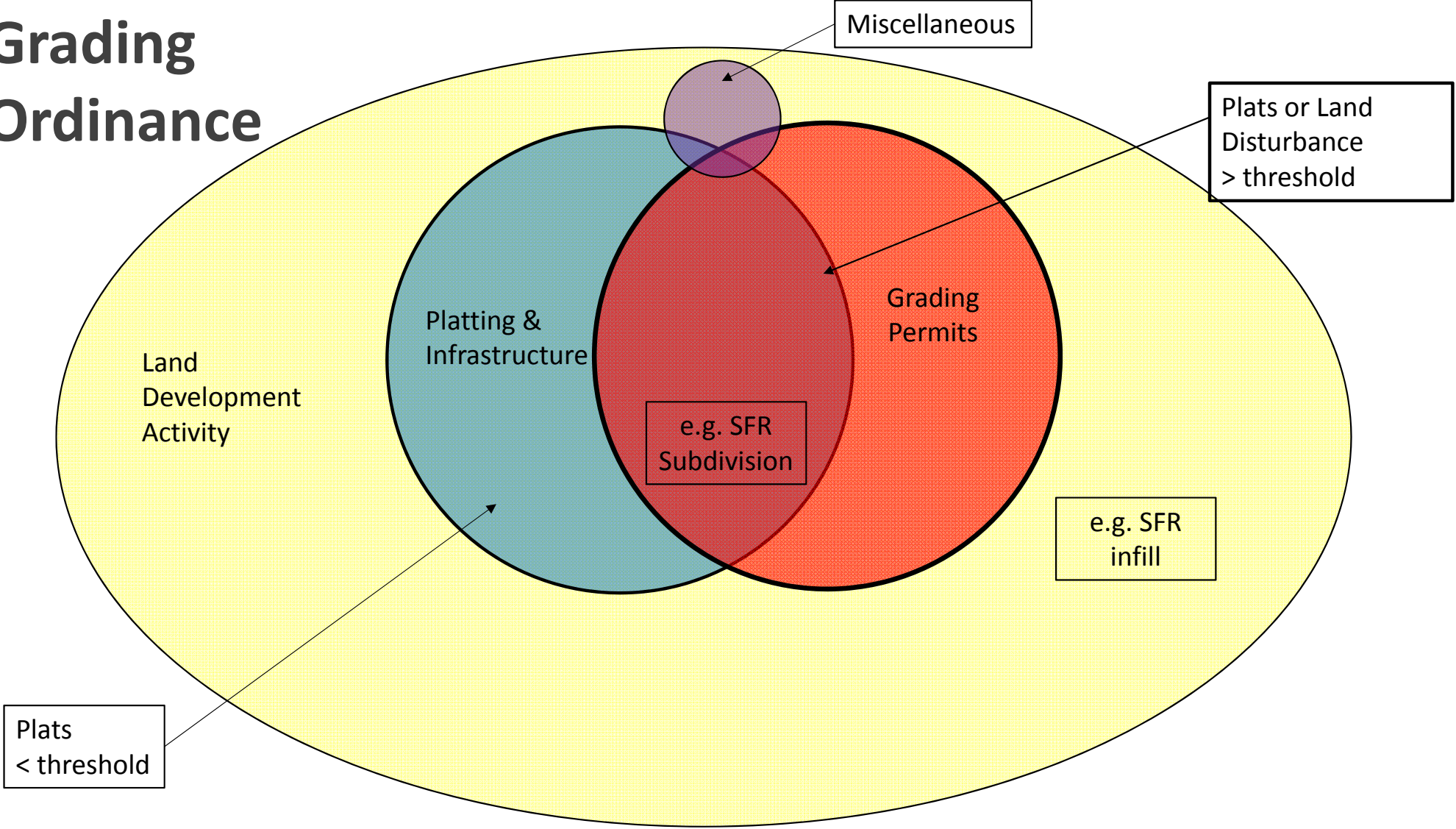
Miscellaneous

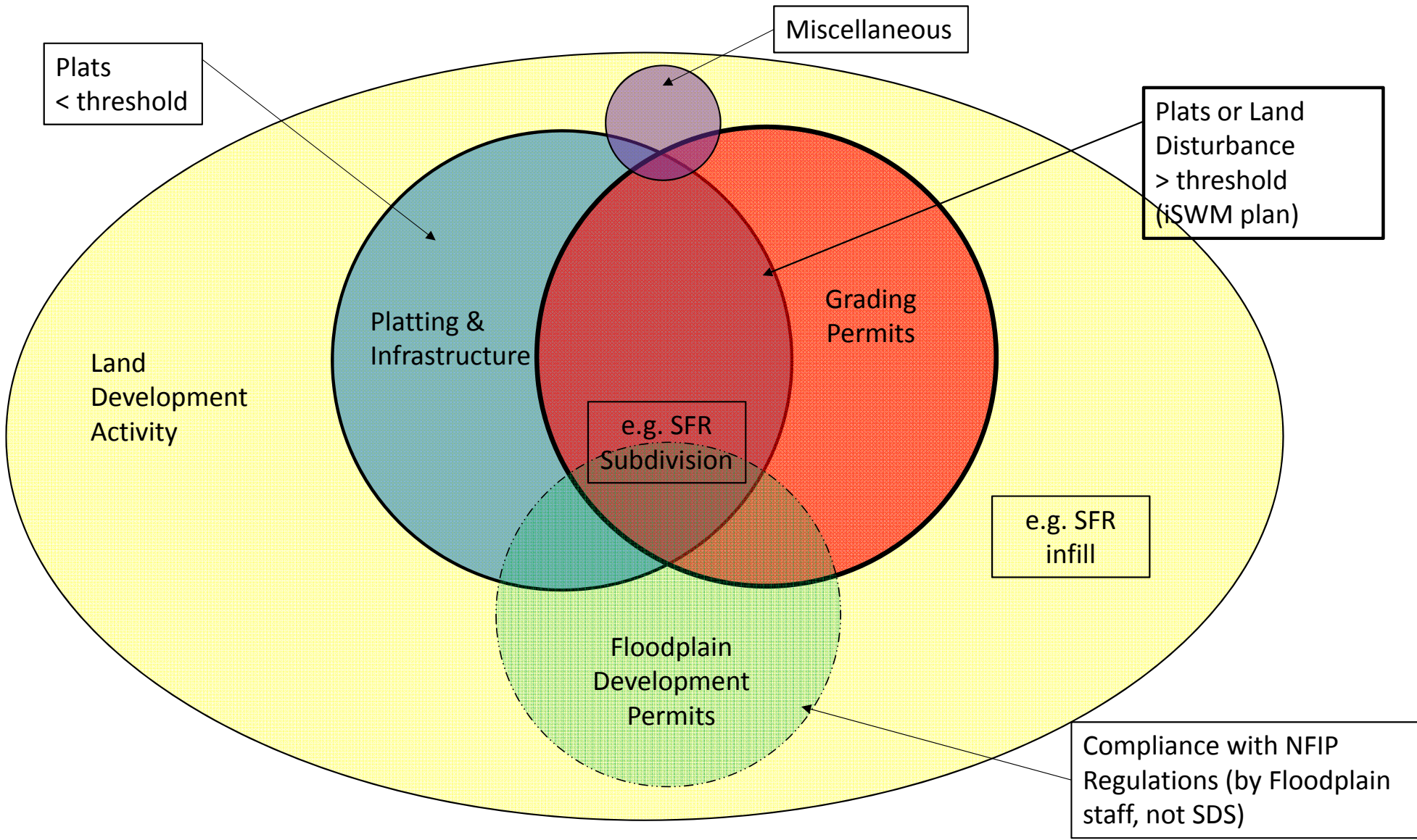


Land  
Development  
Activity

Platting,  
Infrastructure  
& SWMP

# Grading Ordinance





Plats  
< threshold

Miscellaneous

Plats or Land  
Disturbance  
> threshold  
(iSWM plan)

Land  
Development  
Activity

Platting &  
Infrastructure

Grading  
Permits

e.g. SFR  
Subdivision

e.g. SFR  
infill

Floodplain  
Development  
Permits

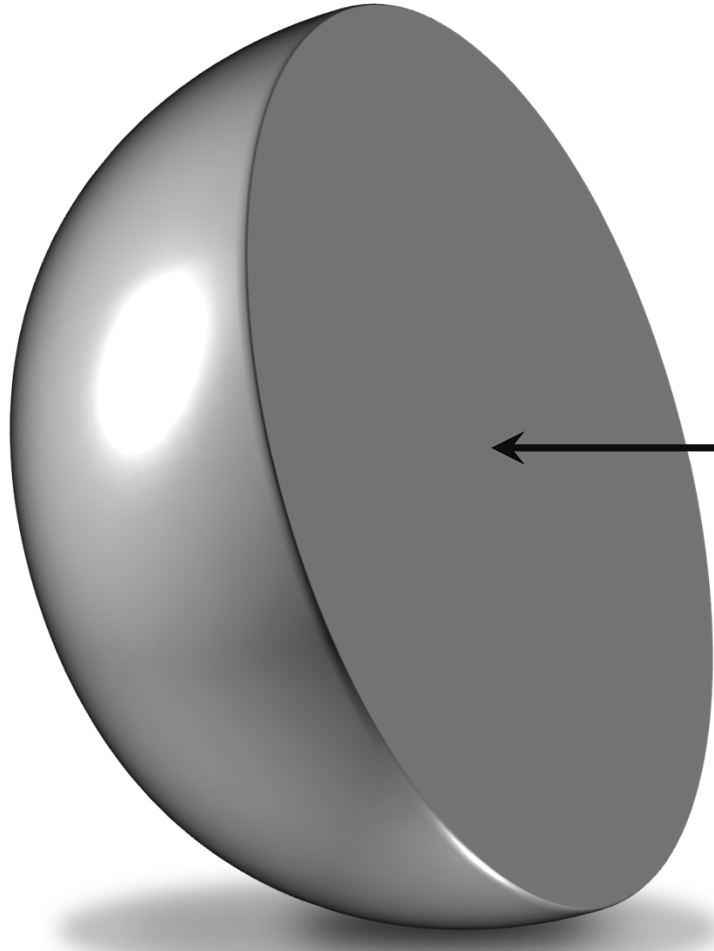
Compliance with NFIP  
Regulations (by Floodplain  
staff, not SDS)



# Background

- Mayor's comments
- Self-evaluation and diagnosis
- Target established – reduce the time and expense associated with SWM permitting



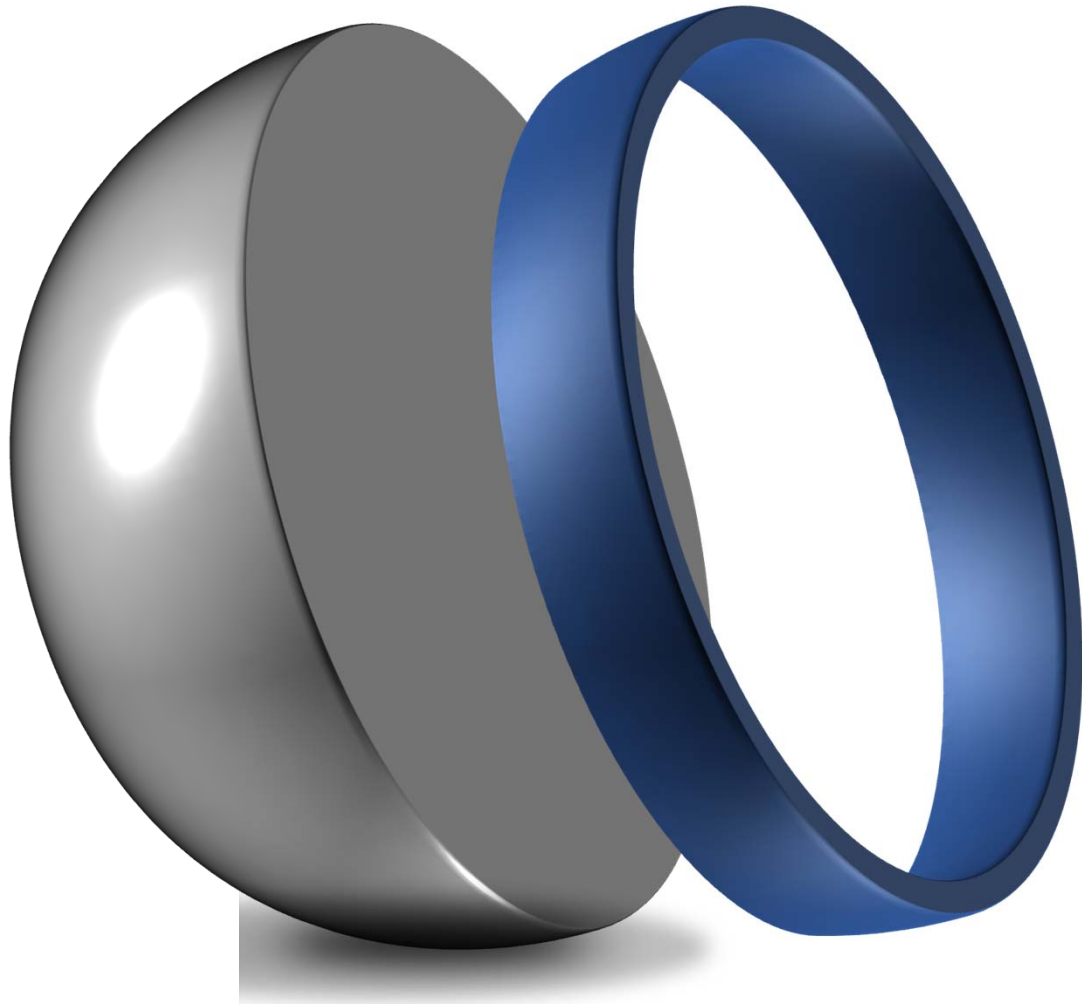


# General Strategy



- a. Reduce the number of review iterations
- b. Improve the quality of submittals





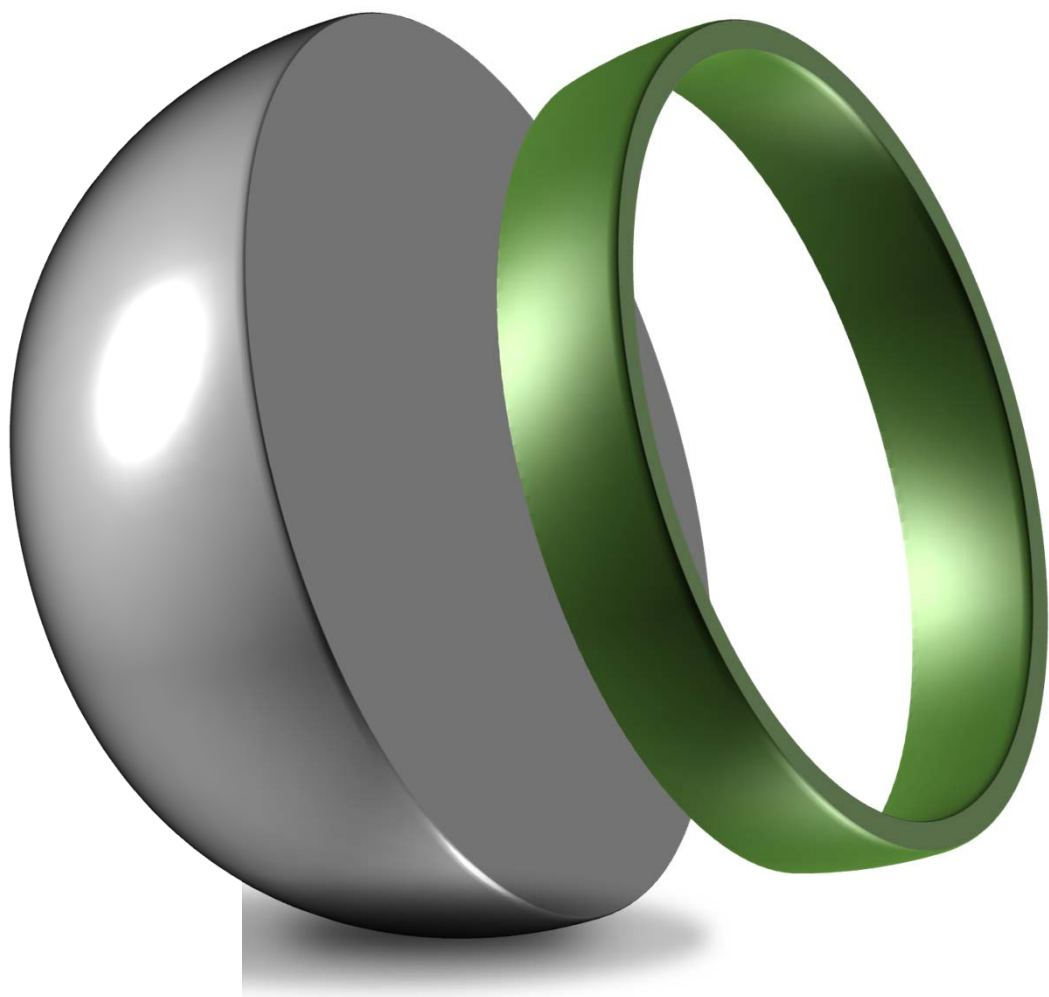
Reduce  
Review  
Iterations

# Earlier Process



## Current Review Process Goal

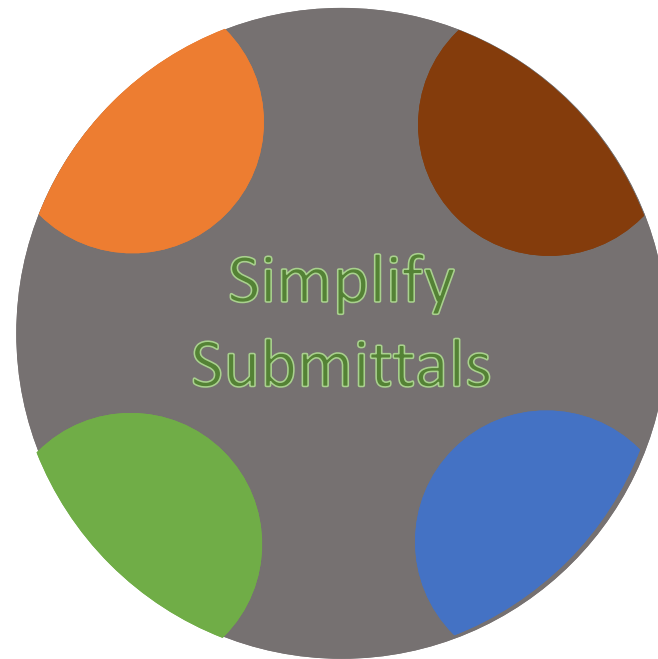




Simplify  
Submittals

**NEW METHODS**

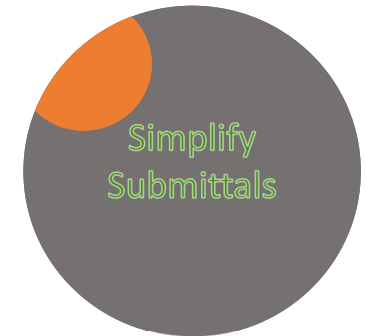
**REDUCE LEVEL OF  
DETAIL EARLY**




**COLLABORATE ON  
SUBMITTAL STRATEGY  
AND CONTENTS**

**FISWM/IPRC TOGETHER**


# NEW METHODS





**TRANSPORTATION AND PUBLIC WORKS DEPT.**  
**STORMWATER MANAGEMENT**

**PRELIMINARY ISWM CHECKLIST**  
Please attach additional sheets as necessary for comments and descriptions.  
Fold all sheets to 8 1/2" x 11" or 9" x 12" and bind with a clip.



**1. Project Information**

A. Name of Project: \_\_\_\_\_ B. Date: \_\_\_\_\_  
 C. Location of Project: \_\_\_\_\_ D. Type of Project (circle one): Development / CIP  
 E. Project Description: \_\_\_\_\_ F. Total Disturbed Area (acres): \_\_\_\_\_  
 G. Proposed land uses (CFW zoning designations (N/A for City CIPs)) \_\_\_\_\_  
 H. Anticipated Start of Construction: \_\_\_\_\_  
 I. Name of Owner (Fort Worth for City CIPs): \_\_\_\_\_ J. Telephone No.: \_\_\_\_\_  
 K. Owner Contact Name (N/A for City CIPs): \_\_\_\_\_ L. FAX No.: \_\_\_\_\_  
 M. Owner Address (N/A for City CIPs): \_\_\_\_\_  
 N. Engineer's Name: \_\_\_\_\_ O. Texas P.E. No.: \_\_\_\_\_  
 P. Engineering Firm: \_\_\_\_\_ Q. Telephone No.: \_\_\_\_\_  
 R. Engineer Address: \_\_\_\_\_  
 S. Engineer's Email: \_\_\_\_\_ T. FAX No.: \_\_\_\_\_

**Note: Highlighted items only required for Conceptual ISWM. All items are required for Preliminary ISWM.**

**2. Items to be Provided (Identify sheet number if included with plans or write "attached" if included as an attachment with this checklist)**

\_\_\_\_ Preliminary Plan or SW Plan  
 \_\_\_\_ Pre-Development Aerial Photo with composite impervious area calculations for SW – See #2 below  
 \_\_\_\_ Pre-Development Drainage Area Map(s) – See #4 below  
 \_\_\_\_ Post-Development Drainage Area Map(s) – See #5 below  
 \_\_\_\_ Narrative – See #6 below  
 \_\_\_\_ **Simplified Methods Utilized and Documentation Provided**  
 \_\_\_\_ Waiver Request (optional)

**Additional Notes:**  
 \_\_\_\_ Developed under manual other than current manual (Identify year)  
 \_\_\_\_ Calculations dependent on a phase developed under previous criteria (Identify year)

Plan File Number (if available): \_\_\_\_\_

Form CFW-1  
Appendix A

City of Fort Worth Stormwater Criteria Manual

**Simplified Finding of No Significant Impact**

For small hill developments that meet specific criteria below, the downstream assessment may be waived. This policy was developed based on an analysis by Dr. Conway Estaur, P.E., CFM, LEED AP, of Dunaway Associates.

**Requirements:**

- The proposed development is less than 5 acres of disturbed land.
- The site developed drains directly to an existing roadway and does not redirect drainage area from one street or watershed to another.
- The receiving roadway has a longitudinal slope of at least 1%.
- The site area is less than 10% of the existing off-site area drainage to the same receiving roadway.
- The existing off-site area (excluding the site to be developed) has a rational C value of at least 0.6.

Submittal of calculations to confirm these conditions will be required at the time of Preliminary ISWM submittal. Once reviewed and accepted by the CFW SDS the site development can be considered as having no significant impact and no mitigation is required.

**Option 2 – Provide On-Site Stormwater Controls (Detention)**

In the event that downstream conveyance systems, including receiving streams, do not have sufficient capacity, on-site stormwater controls may be proposed to mitigate the impact of increased discharges from the site to a level that meets the requirements of Table 3.1 and Chapter 3.7.3.

Downstream assessment may be waived for either of the following conditions:

- Sites proposing detention storage with a contributing drainage area of less than 25 acres at detention outfall, and
- Sites proposing detention when the total site disturbance is less than 5.0 acres.

In cases where detention is proposed to waive downstream assessment, detention volume must adequately address the increase in discharge due to the proposed development.

**Simplified Detention Volume Estimation**

At the preliminary plan stage, a conservative detention volume estimate from the table below may be used in lieu of more detailed detention hydrologic calculations. Table 3.3 below may only be used for sites that do not redirect drainage area from one watershed to another. Please note that the final ISWM submittal will require detailed drainage and design calculations. The table below may be used in lieu of detailed drainage calculations at the preliminary plan and preliminary ISWM plan stage only.

Development Area	Detention Volume Required*
1-25 acres	0-25 acre-feet per acre
More than 25 acres	0-25 acre-feet per acre

\*No calculations are submitted

If this detention estimate is used in lieu of a downstream assessment, the preliminary plan must show the volumes graphically in the appropriate location and at the appropriate scale. In addition, the plan shall include the following text: "This plan identifies preliminary need and locations for storm water storage facilities known as detention ponds. It is expressly understood and agreed by the owner or owner's designee of any specific lot or tract within the platted subdivision that the owner or owner's designee of lots or tracts shall be responsible to provide for the final detention volume mitigation during the site development. The preliminary detention storage volume estimate is noted at each location. The final detailed analysis detention volume and required easement may be more or less than shown on this plan."

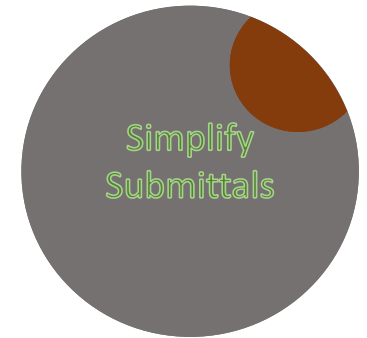
CFW – SEPTEMBER 2015 3-16

**Simplified Finding of No Significant Impact**

**Simplified Detention Volume Estimation**

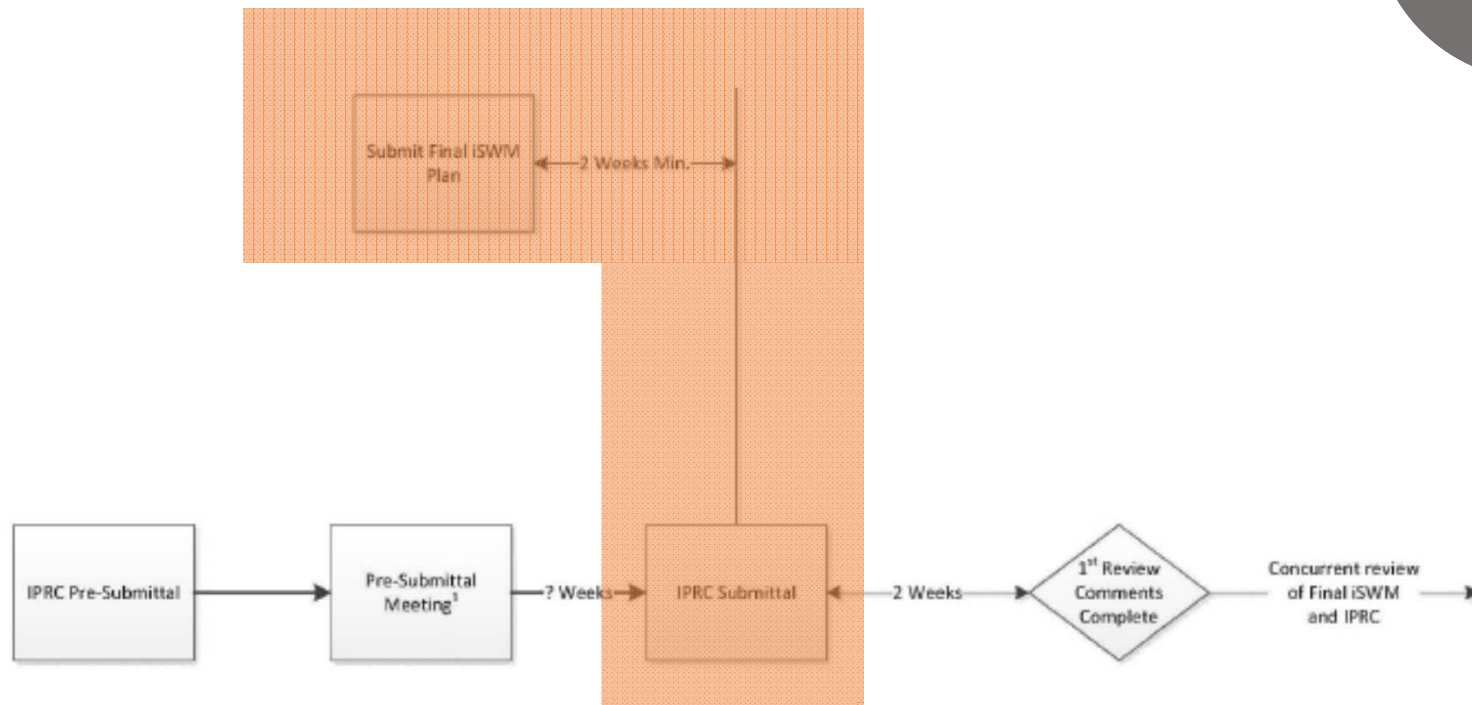
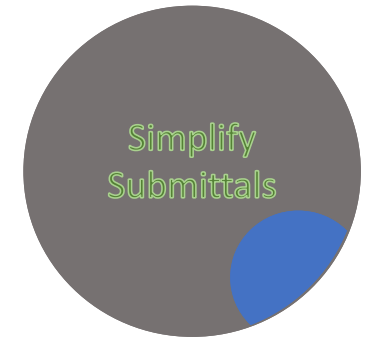
**Simplified Methods Utilized and Documentation Provided**

## REDUCE LEVEL OF DETAIL EARLY



- Reduced Level of Detail at Preliminary iSWM Phase
  - Reduced design and analysis effort earlier in process
    - *Will still be required in Final iSWM*
  - Safe and simple approaches developed to be used to reduce preliminary analysis effort

# FISWM/IPRC

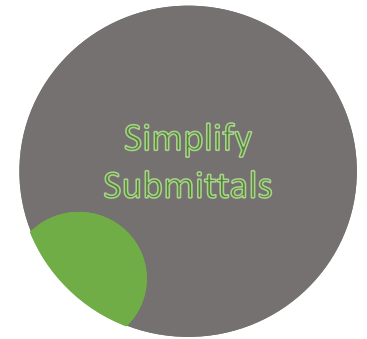


<sup>1</sup>SWM Comments based on Preliminary iSWM and SWM PDC, if used.

Figure 2.2 Stormwater Development Review Process - IPRC



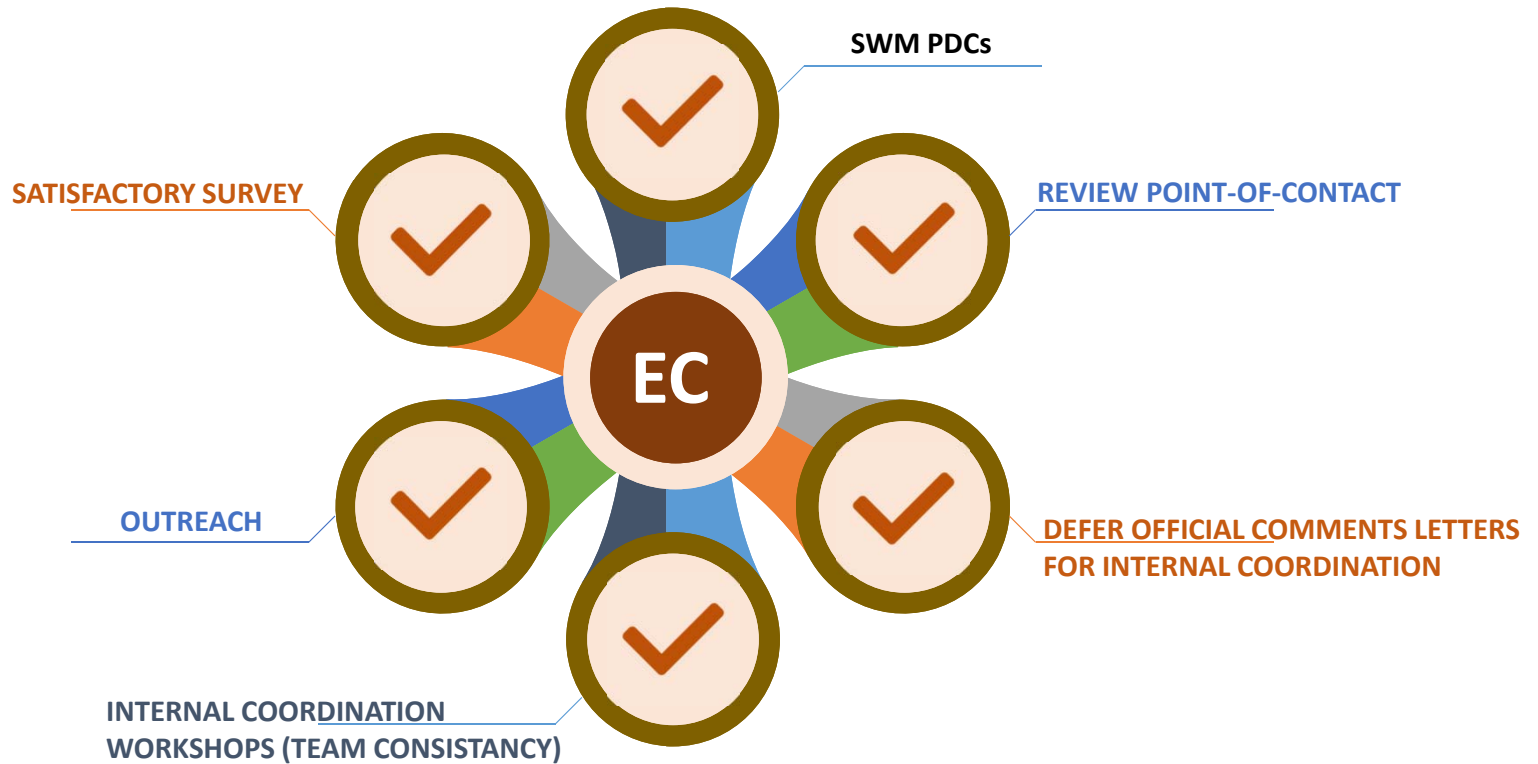
# COLLABORATE ON SUBMITTAL STRATEGY AND CONTENTS





Enhanced  
Communication

# ENHANCED COMMUNICATION (EC)



## RESOURCES

Consultant and staff time (cost), hand outs and templates, standardizing processes

# ENHANCED COMMUNICATION (EC)

## Stormwater Development Services (SDS)

### Pre-Development Conference

### Meeting Request Guidelines

(As of October 2015)



Complete and return the "Stormwater Meeting Request Form.pdf" document to [sds@fortworthtexas.gov](mailto:sds@fortworthtexas.gov).

Current meeting times are most Tuesdays from 1:30-3:00 PM and most Fridays from 10:00 AM to Noon. We meet with applicants in 30-minute timeslots. There are no fees associated stormwater pre-development conferences (PDC's). Due to demand, meeting times are scheduled on a first come first served basis. Times are scheduled based on date/time the meeting request form is returned to SDS staff.

We ask that meeting request forms are returned 24-hours prior to desired meeting time.

Please provide exhibits showing the subject property (email attachment limitation is 10MB)

**FORT WORTH** Meeting Request  
Stormwater Management Development Services  
Transportation & Public Works Department  
1500 Throckmorton Street, Fort Worth, TX 76102  
Email meeting requests to [sds@fortworthtexas.gov](mailto:sds@fortworthtexas.gov)

**Project Information:**  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Location: \_\_\_\_\_ Site Area (ac): \_\_\_\_\_  
Description: \_\_\_\_\_ Disturbance Area (ac): \_\_\_\_\_

**Owner Representative:** Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

**Engineers:** Name: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

**Additional Attendees:** Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

Please ensure that all attendees are listed so that a suitably sized conference room may be reserved.

**Agenda Items:**  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_  
6. \_\_\_\_\_  
7. \_\_\_\_\_  
8. \_\_\_\_\_  
9. \_\_\_\_\_

Please provide specific agenda items to help us prepare to answer your questions and manage meeting time limitations.

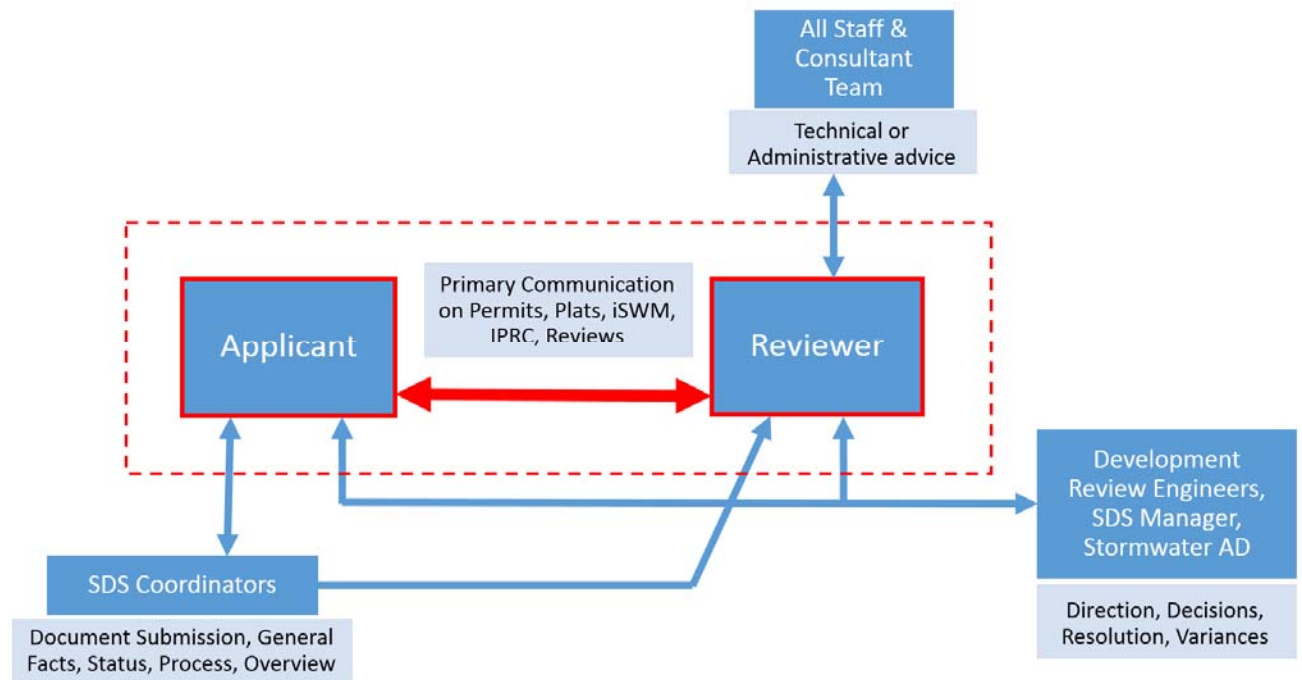
**Attachments / Exhibits:** \_\_\_\_\_  
Project boundary exhibit (required), topography, drainage area maps, site plans or other documents to aid discussion.

**Preferred Meeting Time:**  Tuesday Afternoon  Friday Morning

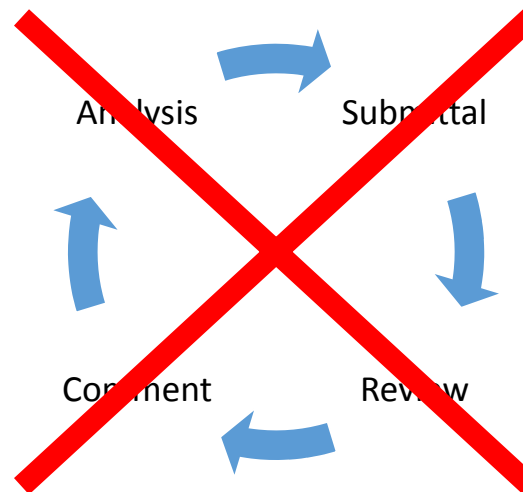
**Notes:**  
\_\_\_\_\_  
\_\_\_\_\_

Stormwater Meeting Request Form 12/15/2013

## ENHANCED COMMUNICATION (EC)



## ENHANCED COMMUNICATION (EC)




## ENHANCED COMMUNICATION (EC)

Internal  
Coordination  
workshops (Team  
Consistency)



# ENHANCED COMMUNICATION (EC)

## SDS NEWSLETTER



**Stormwater Development Services**  
January 2017  
SDS Newsletter, Issue-1

**In this issue:**

- Introduction
- Staff Update
- Seminar
- Floodplain and Drainage Easements

**Introduction**

The City of Fort Worth's Stormwater Development Services (SDS) team would like to introduce you to a new way for us to keep you informed about ways to simplify your permitting process and reduce the time and expense involved. This brief, "newsletter" style, email format will be used to keep you better informed about changes we are making to improve your experience, offer tips to help you reduce the number of review iterations, and even how we plan to manage challenges encountered from time to time. The original goal was to do this monthly during 2017, but we've already encountered one of those "challenges" this year in the form of the departure of Kiran Konduru (our Anticipated Editor), and quarterly schedule might prove to be a better plan.

**Staff Update**

Veteran staff review engineer, Kiran Konduru, is leaving SDS to pursue his career with City's Stormwater Planning team. Kiran has been working diligently with SDS Production Manager, Steve Mason, to prepare and implement a transition plan. Although the transition plan will minimize production and service disruption, we are asking for your patience in the short term as we continue to manage a very high level of development activity. One way you can help us to reduce or eliminate "walk-in meetings or inquiries" with our staff, we have learned that interruptions significantly reduce our production efficiency. Allowing our team to focus on production will allow them to respond to your inquiries in a more timely way. Our staff is eager to meet with you, but we are easing you make an appointment. The best way to contact us is always... [SDS@fortworthtexas.gov](mailto:SDS@fortworthtexas.gov).

**Upcoming Seminar**

In addition to this "newsletter" outreach, we have scheduled a brief "training seminar" for Wednesday, March 1, 2017 at 3pm. The seminar will be held at City Council Chambers and is expected to last no more than two hours. The seminar will address the following topics:

- Platting site developments below the SWIM threshold of 1 acre
- How to make your variance requests more successful


The objective of the seminar is to provide information about the City's development standards and processes and reduce the number of review iterations needed to obtain plat approvals and permits. These seminars are designed primarily for engineering consultants serving the private development community, but owners and developers are also encouraged to participate. The seminars will include roughly 45-60 minutes of instruction, followed by a Q&A session. For additional information, contact us at [SDS@fortworthtexas.gov](mailto:SDS@fortworthtexas.gov).

**Floodplain and Drainage Easements**

SDS reviews all plat applications provided to us by the Planning and Development Department (P&D) and this includes plats of less than 1 acre. Over the past five years there has been a lot of focus on the grading ordinance and SWIM plan thresholds for review (currently 1 acre). However, the platting process is governed by the subdivision ordinance which includes some provisions for stormwater management applicable to all plats. Regarding stormwater easements, the ordinance tells us that drainage ways shall be contained in a drainage easement or floodplain easement. The stormwater criteria manual is consistent with the ordinance, and it informs the applicant of those requirements. In other words, for all plats (and the subdivision ordinance tells us that a drainage way is placed in an easement) and the stormwater criteria tells us the easement width and type. The combination of ordinance and stormwater criteria creates a framework for managing stormwater and flood risk and could be drilled down to: "the 100-year storm should be contained in an easement or ROW." This basic framework guided development in the City of Fort Worth even before the adoption of SWIM policies. We plan to discuss this in more detail at the March 1st seminar.

Please contact us at [SDS@fortworthtexas.gov](mailto:SDS@fortworthtexas.gov) to be added to or removed from our mailing list.

SDS is still located at City Hall, however the building address was revised to 200 Texas Street.





## ENHANCED COMMUNICATION (EC)



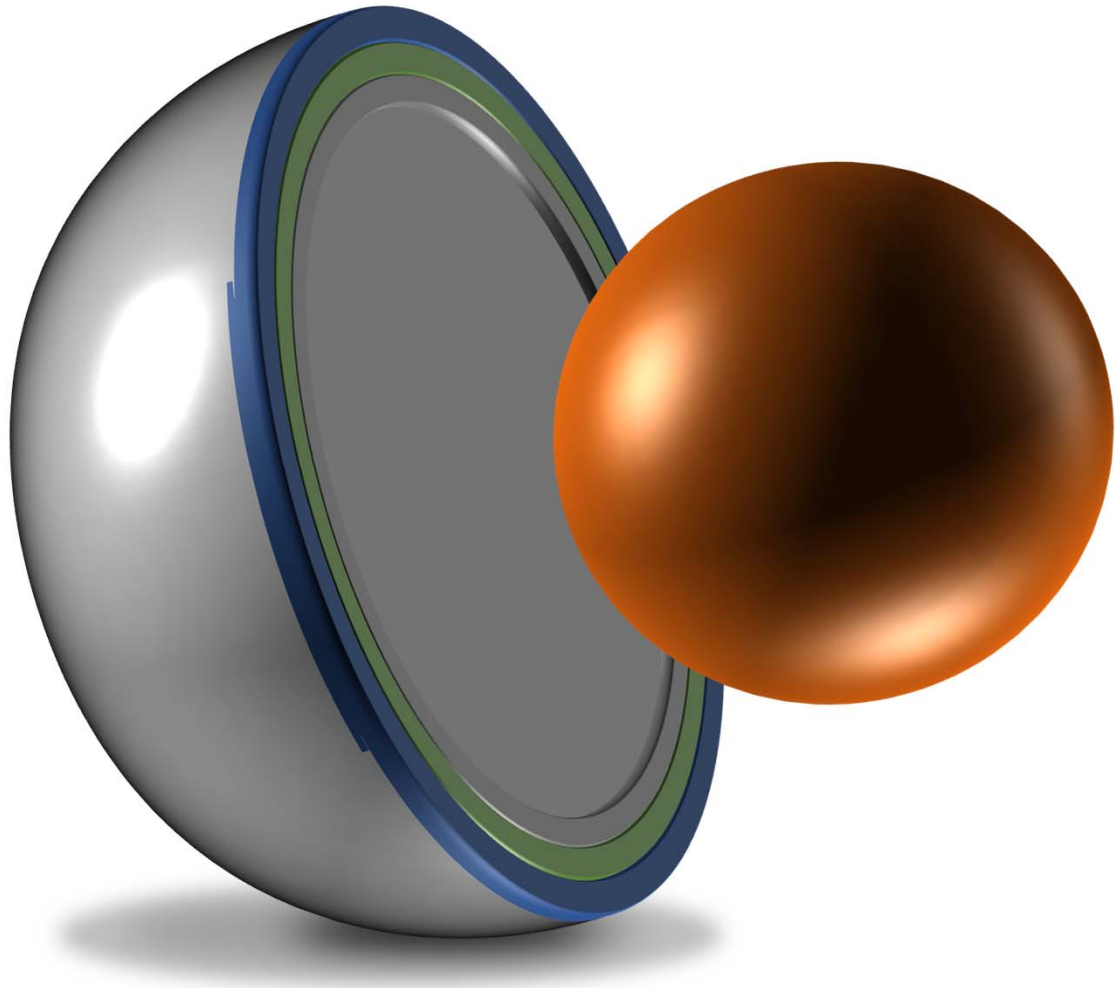
### Tracking Survey Metric

Survey Metrics Within Date Range (15 Surveys Completed Within Date Range)		External	Internal	Total
Q1	The overall experience in obtaining this Stormwater acceptance was generally positive.	4.23	5	4.33
Q2	Review staff displayed a customer service focus during this review process.	4.25	5	4.36
Q3	Review staff was flexible and willing to consider alternative solutions (exercised reasonable engineering judgment) during the review process.	4.5	5	4.57
Q4	The level of detail of the Stormwater review was reasonable.	4.38	5	4.47
Q5	The overall time from application to acceptance was reasonable.	3.69	5	3.87

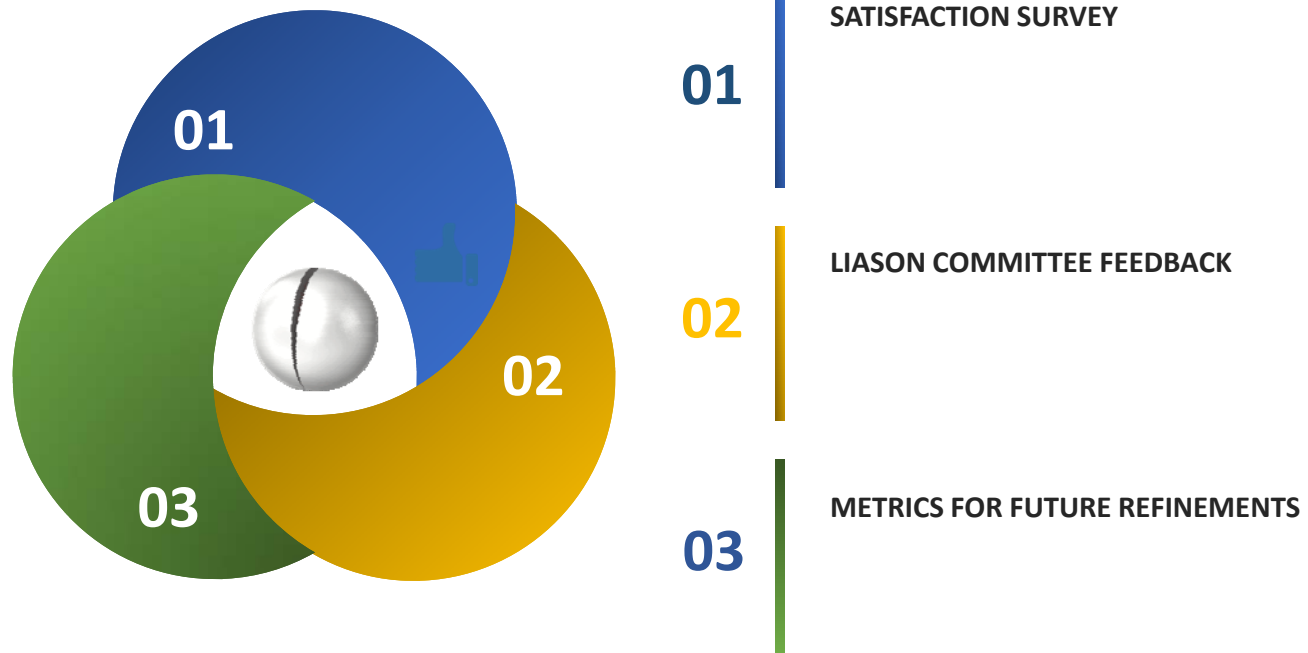
## ENHANCED COMMUNICATION (EC)



**To Provide Better Customer Service**



# RESULT



# SATISFACTION SURVEY

**City of Fort Worth Review Survey**

Thank you for participating in this brief satisfaction survey related to your interaction with City of Fort Worth Stormwater Development Review Services. Our goal is to provide excellent service to the applicant, while protecting the health, safety and welfare of the community and promoting orderly development in the City of Fort Worth.

Please take a moment to rate your overall experience related to this review. On a scale from 1 (least positive) to 5 (most positive), please rate each of the following statements regarding your experience with this specific permit.

Question	Satisfaction Scale (1 to 5, lowest to highest)	Comment
Q1 The overall experience in obtaining this Stormwater acceptance was generally positive.	N/A <input checked="" type="checkbox"/>	<input type="text"/>
Q2 Review staff displayed a customer service focus during this review process.	N/A <input checked="" type="checkbox"/>	<input type="text"/>
Q3 Review staff was flexible and willing to consider alternative solutions (exercised reasonable engineering judgment) during the review process.	N/A <input checked="" type="checkbox"/>	<input type="text"/>
Q4 The level of detail of the Stormwater review was reasonable.	N/A <input checked="" type="checkbox"/>	<input type="text"/>
Q5 The overall time from application to acceptance was reasonable.	N/A <input checked="" type="checkbox"/>	<input type="text"/>

Name

Email

Phone

General Comments

“I have worked with the stormwater group many times in the past and it always felt like we were on separate teams working against each other. This experience the stormwater staff came up with custom solutions that fit the needs of my specific project. It felt like a much more collaborative effort than past experiences. “

“Staff (Kiran and Wade) were awesome to work with.”

“...I am telling my clients that getting a iSWM plan approved in Fort Worth is not what it used to be.”

Survey Metrics Within Date Range (57 Surveys Completed Within Date Range)		External	Internal	Total
Q1	The overall experience in obtaining this Stormwater acceptance was generally positive.	4.4	4.6	4.42
Q2	Review staff displayed a customer service focus during this review process.	4.55	4.8	4.57
Q3	Review staff was flexible and willing to consider alternative solutions (exercised reasonable engineering judgment) during the review process.	4.43	4.4	4.43
Q4	The level of detail of the Stormwater review was reasonable.	4.42	4.6	4.44
Q5	The overall time from application to acceptance was reasonable.	4.21	4.2	4.21

# METRICS

## Dashboard

Review Type

End Date:

iSWM Database Metrics	External	Internal	Total
Reviews in Process with City and Owner	157	19	176
Reviews in Process with City	42	8	50
Average Age of Reviews Currently with City	12.38	24.88	14.38
Average Age of Reviews Currently with Owner	24.27	58.91	27.29
Active (City) Reviews Greater Than 10 Business Days	21	4	25
Reviews On Hold	0	0	0
Incomplete Reviews	3	0	3
Inactive Reviews	184	57	241
Avg. Review Cycles for Accepted Reviews	2.62	2.05	2.41

Start Date:  End Date:

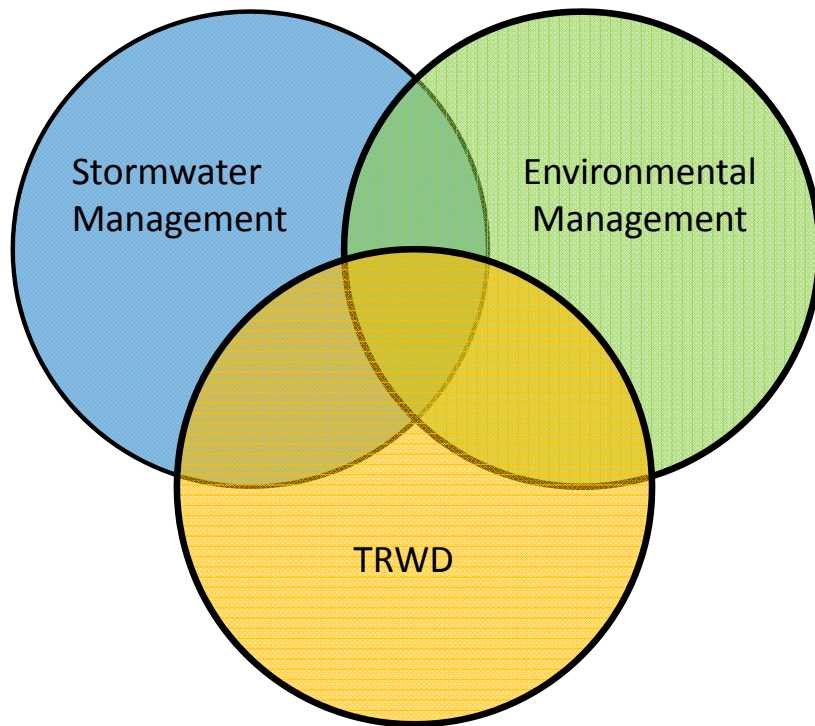
iSWM Database Metrics Within Date Range	External	Internal	Total
New Reviews Received by City	73	10	83
Reviews Accepted by City	73	6	79
New Reviews Received and Accepted by City	13	1	14
Average City Review Time	10.6	12.72	10.75
City Review Cycles Completed	233	18	251
Percent of Review Cycles Taking 10 Days or Less	43.35	50	43.82
Avg. Review Cycles for Accepted Reviews	1.15	1	1.14

Survey Metrics Within Date Range (15 Surveys Completed Within Date Range)		External	Internal	Total
Q1	The overall experience in obtaining this Stormwater acceptance was generally positive.	4.23	5	4.33
Q2	Review staff displayed a customer service focus during this review process.	4.25	5	4.36
Q3	Review staff was flexible and willing to consider alternative solutions (exercised reasonable engineering judgment) during the review process.	4.5	5	4.57
Q4	The level of detail of the Stormwater review was reasonable.	4.38	5	4.47
Q5	The overall time from application to acceptance was reasonable.	3.69	5	3.87

- KPI reporting
- Track our performance and your performance

# Stormwater and Environmental Management



- Typical iSWM Plan:
  - Velocity & Erosion Potential
  - iSWM Construction Plan
- Water Quality Program:
  - Voluntary & Incentivized
- City Coordination with TRWD:
  - Co-permittee on MS4
  - Desire for improved water quality
  - MOU on WQD and SWFMA

# Stormwater Development Services (SDS): An Overview



Questions/Comments/Conclusion

Contact us at: [SDS@fortworthtexas.gov](mailto:SDS@fortworthtexas.gov)



# Resources for Applicants

- Stormwater PDC Info and Meeting Request Form:
  - <https://projectpoint.buzzsaw.com/Fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/Stormwater%20Meeting%20Request%20Guidelines.docx?public>
  - <https://projectpoint.buzzsaw.com/fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/Stormwater%20Meeting%20Request%20Form.pdf?public>
- How to Submit iSWM Plans and Related Documents:
  - <https://projectpoint.buzzsaw.com/fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/iSWM%20Criteria%20Manual/iSWM%20Submittal%20Process.png?public>
  - <https://projectpoint.buzzsaw.com/fortworthgov/iSWM%20Reviews/Submittals?public> (iSWM submittal folder location)
- 2015 CFW Stormwater Criteria Manual:
  - <https://projectpoint.buzzsaw.com/Fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/iSWM%20Criteria%20Manual/2015%20Manual/City%20of%20Fort%20Worth%20Stormwater%20Criteria%20Manual%20-%20September%202015.pdf?public>
- 2015 CFW iSWM Checklists:
  - [https://projectpoint.buzzsaw.com/Fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/iSWM%20Criteria%20Manual/2015%20Manual/Checklists\\_2015?public](https://projectpoint.buzzsaw.com/Fortworthgov/Resources/10%20-%20Design%20Guidelines/Storm%20Water%20Design%20Manual/iSWM%20Criteria%20Manual/2015%20Manual/Checklists_2015?public)
- NCTCOG iSWM Technical Manuals:
  - [http://iswm.nctcog.org/technical\\_manual.asp](http://iswm.nctcog.org/technical_manual.asp)
- Contact us at: [SDS@fortworthtexas.gov](mailto:SDS@fortworthtexas.gov)