



STORM DRAINAGE DESIGN MANUAL UPDATE

March 23rd, 2017



REQUESTED ACTION

- 1. Receive and discuss further information requested on the update to the Storm Drainage Design Manual**
- 2. Schedule future Council Meeting for adoption, if appropriate**



March 23rd, 2017



AGENDA

- **Public Outreach and Comments**
- **Council Comments**
- **New Requirements**
- **Cost Implications**
- **Options**
- **Adoption Process**



March 23rd, 2017



PUBLIC OUTREACH

- March 8th Newspaper Advertisement
- Flyers at Building Dept and Engineering Dept
- Media Boards
- Notify Me E-mail List

You are Invited!
Paradise Valley Watershed Study Public Meeting:
Storm Drainage Design Manual Draft Review
Tuesday, March 21st 6:00pm - 8:00pm
Paradise Valley Town Hall

Storm Drainage Design Manual
Come hear about proposed new requirements for:

- Stormwater Management
- Drainage Reports
- Storm Drainage Design
- Town Grading Permits

Meeting Purpose: The town is currently in the process of updating its Storm Drainage Design Manual, originally written in 1987. A proposed draft of the updated document can be downloaded by going to the website below. The updated document seeks to provide property owners and the development community the most comprehensive source for storm drainage design, including requirements for Drainage Reports, SWPPP's, storm water facility design guidelines, retention requirements, first flush requirements, etc. for projects within the Town of Paradise Valley. The town will be holding a public meeting to receive public comments on the document.

www.paradisevalleyaz.gov/520/Stormwater-Management

If you have any questions or would like to provide comments prior to the meeting or in writing, please e-mail them to Jeremy Knapp at jknapp@paradisevalleyaz.gov.

 Town of Paradise Valley
WATERSHED STUDIES

TOWN OF PARADISE VALLEY INDEPENDENT 23

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Meeting Location:
Paradise Valley Town Hall
8801 E Lincoln Dr
Paradise Valley, AZ 85253

When:
Tuesday, March 21st
6:00pm - 8:00pm

If you have any questions or would like to provide comments prior to the meeting or in writing, please e-mail them to Jeremy Knapp at jknapp@paradisevalleyaz.gov.

March 23rd, 2017



PUBLIC COMMENTS

- Phone Calls / E-mails
- March 21st Public Meeting

**Slide intentionally left blank,
will be updated after the March 21st Public Meeting**



March 23rd, 2017

PUBLIC COMMENTS

**Slide intentionally left blank,
will be updated after the March 21st Public Meeting**



March 23rd, 2017

COUNCIL COMMENTS

- **Underground retention for single family residences**
- **Pool backwash on hillside lots**
- **Retention basin easements**
- **Review Appendix 6B Warning and Disclaimer of Liability**
- **Identification of new requirements**
- **Additional costs associated with complying**



NEW REQUIREMENTS

- **Retention basin easements**
- **First flush requirements**
- **Tiered hillside retention requirements**
- **Operation and maintenance requirements for underground storage**
- **Roadway design requirements**
- **Stockpile plans**



COST INDICATORS

- Hard to identify actual costs
 - Multiple ways to address requirements depending on site, preference, etc.
- Did not include items that town currently enforces by outside requirements (i.e. Storm Water Pollution Prevention Plans)
- Utilized scale from \$ to \$\$\$

\$ - < \$2,500

\$\$ - \$2,500 to \$10,000

\$\$\$ - > \$10,000



COST INDICATORS

Item	Summary	Outside Regulation	SDDM Section	Additional Cost
Substantial Improvement Worksheet	Required when rebuilding structure in SFHA	FEMA	2-4	\$
Hillside Retention	Tiered requirement based on lot slope	N/A	3-2.B.1.c	\$ - \$\$\$
First Flush Requirement	Retention of first ½ inch of rainfall to reduce particulates in washes	EPA	3-2.B.2	No cost to \$\$\$
Retention basin certification	Certified retention basin capacity post construction by engineer	N/A	3-2.B.3	\$
Operations/Maintenance for underground basins	Requires training, documentation, inspection and maintenance	N/A	3-3.E	\$\$



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COST INDICATORS

Item	Summary	Outside Regulation	SDDM Section	Cost
Roadway design requirements	Requirements for culverts under the roadway if a wash crosses it	N/A	3-5	\$\$\$
Erosion Hazard Management	Analysis of erosion potential and bank stabilization of washes on site	ADWR/FCDMC	4-1	No cost to \$\$\$
Low Impact Development	At owners/developers discretion, improvements to manage stormwater at source	N/A	6-1	No cost to \$\$\$
Retention Basin Easements	Requirement for an easement over retention basins on private property	N/A	8-1	\$ - \$\$
Stockpile Plans	Requirement for a grading plan for temporary stock pile of materials	N/A	9-2	\$\$



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POLICY QUESTIONS

1. Calculation for flatland retention for disturbed area

- Currently calculated as a weighted average of impervious area of the entire site
- Proposed in manual as actual impervious area of site

2. Hillside retention requirements on tiered scale

- Current requirement states “is required but may be waived in cases where the average slope of the property exceeds 5%”
- Proposed in manual as a tiered reduction based on lot slope
 - Lots with Slope 10-20% require 100% retention
 - Lots with Slope 20-30% require 50% retention
 - Lots with Slope above 30% require no retention

POLICY QUESTIONS

3. First flush requirement for first ½" of rainfall

- Currently not required
- Proposed in manual that if retention is provided on site, first flush is required to be retained



OPTION 1

- **Adopt as written (Recommendation)**
 - **Include action on three policy decisions:**
 - 1. Calculation for flatland retention for disturbed area**
 - 2. Hillside retention requirements on tiered scale**
 - 3. First flush requirement for first ½” of rainfall**



OPTION 2

- **Adopt without policy questions answered**
 - **Revert to existing requirements:**
 1. **Calculation for flatland retention for entire site**
 2. **Hillside retention as current code states**
 3. **No first flush requirement for first ½" of rainfall**



ADOPTION PROCESS

- **Two part process:**
 - 1. Resolution adopting the amended Storm Drainage Design Manual**
 - 2. Ordinance to change the text of Town Code Section 5-10-3 Storm Drainage Design**



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