

RESOLUTION NO. 2272

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF PAYSON, ARIZONA, AMENDING PORTIONS OF CHAPTER 152 (GRADING AND DRAINAGE) OF THE CODE OF THE TOWN OF PAYSON, AND DECLARING SUCH AMENDMENT TO BE A PUBLIC RECORD (AMENDMENTS TO DRAINAGE REQUIREMENTS).

WHEREAS, the Code of the Town of Payson was declared to be a public record by Resolution Number 1536 of the Town of Payson; and

WHEREAS, the Code of the Town of Payson was adopted as a public record by Ordinance Number 588 of the Town of Payson; and

WHEREAS, it is the intention of the Town of Payson to amend portions of Chapter 152 (Grading and Drainage) of the Code of the Town of Payson; and

WHEREAS, such amendment may be enacted by reference, pursuant to A.R.S. § 9-802,

NOW, THEREFORE, THE MAYOR AND COMMON COUNCIL OF THE TOWN OF PAYSON, ARIZONA, DO HEREBY RESOLVE AS FOLLOWS:

Section 1. Sections 152.11, 152.31, 152.60, and 152.61 of Chapter 152 (Grading and Drainage) of the Code of the Town of Payson are hereby amended, and as amended shall read as set forth in Exhibit A attached hereto.

Section 2. If any section, subsection, sentence, clause, phrase or portion of Resolution Number 2272 is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of Resolution Number 2272. The Town Council of Payson declares that it would have adopted Resolution Number 2272 and each section, subsection, sentence, clause, phrase, or portion thereof, irrespective of the fact that any one (1) or more sections, subsections, sentences, clauses, phrases, or portions may be declared invalid or unconstitutional.

PASSED AND ADOPTED BY THE MAYOR AND COMMON COUNCIL OF THE TOWN OF PAYSON this _____ day of _____, 2007, by the following vote:

AYES _____ NOES _____ ABSTENTIONS _____ ABSENT _____

F. Robert Edwards, Mayor

ATTEST:

APPROVED AS TO FORM:

Silvia Smith, Town Clerk

Samuel I. Streichman, Town Attorney

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EXHIBIT A TO RESOLUTION 2272

§ 152.11 POLICIES.

The following policies ~~apply relate to submittal requirements to be provided with subdivision~~ drainage studies required to be submitted to the town for approval. When applicable, exceptions to these policies may be made in writing at the discretion of the Town Engineering Department ~~Public Works Engineer~~ under special conditions.

(A) It is the policy of the town that each type of development and improvement project requires a drainage evaluation. Each drainage evaluation requires submittal of a report documenting the findings and results of that evaluation to the ~~Public Works~~ Town Engineer for review and possible approval. The submittal review process is described in § 152.12.

(B) There are nine types of drainage report submittals covering different types of developments defined for the town review process. The types of report submittals, and the corresponding types of development, are shown in Table 2.1. A description of each type of report submittal is described in § 152.13.

(C) All drainage reports produced for projects within the town shall reference the *Drainage Master Plan for Town of Payson, Gila County, Arizona* (2001) (PDMP), latest revision, and describe how the results of that plan affect the project in question.

(D) The appropriate sections of the Town's Unified Development Code ~~UDC~~, latest revision adopted by the town, shall apply as appropriate and deemed necessary by the town.

(E) The town recommends discussing all proposed drainage submittals with town staff prior to preparing and submitting a drainage report for review. Any drainage evaluation submitted to the town for review and possible approval must be prepared and ~~sealed stamped~~ by a Professional Civil Engineer licensed to practice within the State of Arizona. The only exception is a residential single lot development permitted to an owner/builder.

(F) A property owner shall not modify the manner in which or location where storm water enters or exits the property owner's property without prior written consent of the adjoining property owner(s) effected by such change and written approval by the Town Engineer. This includes changing exiting runoff from sheet flow to concentrated flow.

§ 152.31 POLICIES.

The following policies ~~apply~~ relate to hydrologic modeling methodology used in for application to subdivision drainage studies submitted to the town ~~for approval~~. When applicable, exceptions to these policies may be made in writing at the discretion of the ~~Public Works~~ Town Engineer under special conditions.

(A) Peak runoff and volume calculations shall be performed, at a minimum, for the 2-, 10-, and 100-year return periods, in conjunction with all drainage reports for private developments and public works projects. The 24-hour duration storm shall be used for all watersheds modeled using the unit hydrograph method.

(B) Peak runoff and volume calculations shall be performed for both existing and proposed conditions. Proposed condition peak runoff flow rates for the 2-, 10- and 100-year 24-hour storms ~~may not exceed existing conditions.~~ shall not exceed 75% of the existing conditions for the respective storms. A statement to this effect must be either in the Final Drainage Report or on the improvement plans. The hydrologic modeling for the project must demonstrate that this requirement is met. Refer to § 152.61(A) for the only exception to this policy.

(C) It is the policy of the town that increases in runoff volume ~~over the existing condition for the 2- and 10-year storms~~ be allowed to percolate into the ground as much as infiltrate wherever possible. This may be accomplished with either detention basins designed to maximize detention time for the more frequent storms, in-channel check basins or improvement of on-site watershed initial abstraction. Soil conditions on the site must be conducive to percolation. Refer to §§ 152.60 - 152.62 for policies regarding detention/retention requirements and basin times.

§ 152.60 PURPOSE.

The following section describes the criteria and policies which are to be followed for the analysis and design of storm water storage facilities associated with developments located within the town. The purpose of implementing storm water storage is to mitigate the impacts of increased flow peaks that occur as a result of watershed urbanization. The intent of storm water storage requirements is to reduce post development peak flows to 75% of ~~hold runoff to~~ historic peak levels for the full range of storm events, from the 2-year through the 100-year event. Regardless of the calculation method utilized to analyze detention facilities, it is necessary to demonstrate that post development peak flows runoff peaks are reduced to no more than 75% of the peak flows at "existing conditions" maintained at "existing condition" levels for the 2-, 10- and 100-year 24-hour storm events. The reason for this requirement is that the impact of development is normally far more pronounced for the frequent storms than it is for major storms, such as the 100-year event. For example, while the developed peak runoff for a 100-year event may be only 20% higher than the historic runoff, it is common that the 2-year peak runoff, under developed conditions, may be as much as 2 to 6 times larger than the undeveloped runoff. A facility designed to detain only the 100-year storm event may be practically ineffectual when functioning under the more frequent storm events. As a result, facilities must be designed with multi-frequency outlet structures in order to perform as intended.

§ 152.61 POLICIES.

The following policies relate to required stormwater storage information to be provided with subdivision drainage studies submitted to the town for approval. When applicable, exceptions to these policies may be made at the discretion of the ~~Public Works~~ Town Engineer under special conditions.

(A) *General policies.*

(1) Stormwater detention/retention shall be incorporated within subdivisions, commercial or industrial developments ~~that are one acre or larger in area. Stormwater detention may be required on developments smaller than one acre in area, if downstream flooding or erosion hazards may be increased as a result of development.~~ The detention/retention system shall have the effect of ensuring that, at a minimum, post-development 2-, 10- and 100-year 24-hour peak discharges from the development will not exceed 75% of the corresponding pre-development values. ~~The following is the only exception to this policy. A variance must be requested and approved in writing by the Public Works Engineer for this exception to be allowed. Refer to § 152.62(A):~~

~~On-site detention results in an increase in peak discharge at locations in the watershed downstream of the proposed project due to timing of peak discharges, and on-site retention is impractical. The increase must be greater than if on-site detention is constructed. There must be sufficient hydraulic capacity in the downstream drainage conveyance system to convey the proposed condition 100-year peak discharge to the Town corporate boundary without damaging homes or property, either within or outside the Town. The proposed condition peak discharges may not result in any increase in the future condition peak discharges listed in the PDMP. If these conditions cannot be met, the proposed development must be revised so the Town drainage policy can be met.~~

~~(2) If the detention requirement is waived, the Public Works Engineer may assess the developer a fee equal to the estimated cost of constructing the on-site detention facilities. This fee will be deposited with the town prior to issuance of a grading permit. The fee will be placed in an impound account and used for future construction of regional detention or drainage conveyance facilities. The total amount of the fee will be based on the difference between the post-development and 75% of pre-development runoff volume for the site from a 100-year 24-hour storm. A standard fee based on dollars per acre-foot of excess runoff volume will be set by the Public Works Engineer, and revised on an annual basis.~~

(3) The use of rooftops as storage areas for runoff is not an acceptable method of meeting the detention/retention criteria of the town.

(4) Individual lot-storage systems within single-family residential developments are discouraged ~~not acceptable for meeting the detention/retention criteria of the town.~~

(5) Finished floors of structures shall be a minimum of one foot above the 100-year water-surface elevation of any adjacent detention/retention basin(s).

(6) No part of any storm water detention/retention facility for a private development shall be constructed within any public right-of-way.

(7) Detention/retention areas within subdivisions shall lie within a separate tract or easement dedicated for drainage management purposes.

(8) The use of dry wells is prohibited for draining detention or retention basins.

(B) *Detention policies.*

(1) ~~Detention basins shall be designed for the 2-, 10- and 100-year 24-hour storms.~~ The intent of a detention basin is to reduce the storm water water peak flow leaving a site. Detention basins shall be designed to reduce the peak post-development flows to be at or below 75% of the pre-development flows for the 2-, 10- and 100-year 24-hour storms.

(2) The only outlet allowed in the bottom one third by depth of a detention basin is a two inch orifice. Above the bottom one third depth, the orifice shall designed to restrict the flows to no more than 75% of the 2-, 10- and 100-year 24-hour storms. The actual outlet pipe the orifice supplies shall be a minimum of eighteen inches in diameter unless otherwise approved by the Town Engineer. For the purposes of this section, the bottom one third of any detention basin shall not exceed one foot in depth.

(3) Gravity drainage of a detention basin must be used where available. If gravity drainage is not available, a pump system may be used. If a pump system is used, it shall conform to the following requirements:

- (a) The pump system shall be privately owned, operated, and maintained.
- (b) The pump system shall be equipped with an automatic control switch with a vertical float mechanism, or equivalent device to turn on and off automatically.
- (c) The pump shall be located in an inlet box or wet well. The wet well shall be located at the edge of the detention basin where it can be maintained even if there is water in the detention basin.
- (d) The wet well shall have a gate or other type of control device that can restrict the flow into the wet well.

(e) The pump discharge flow rate shall meet the requirements of Section 152.31(B). Multiple staging of pumps may be required to meet such requirements.

(24) On-line detention facilities shall not be permitted on natural watercourses or watercourses that drain more than 100 acres upstream of the detention-basin outlet structure, unless written approval to do so is obtained from the ~~Public Works~~ Town Engineer.

~~(3) The maximum depth of ponded water within any parking area shall not exceed one foot for the 100-year storm. Planning of areas within a parking lot, which will accept ponding, should be such that pedestrians are inconvenienced as little as possible. Deeper areas should be confined to remote areas of parking lots, whenever possible.~~

(5) If a parking lot is used as a detention area, the maximum depth of ponded water within any parking area shall not exceed one foot for the 100-year storm. Planning of areas within a parking lot, which accept ponding, should be such that pedestrian inconvenience is minimized. Deeper areas should be confined to remote areas of parking lots, whenever possible.

(46) The minimum longitudinal slope permitted within parking-lot storage facilities is 0.005 foot per foot, unless concrete valley gutters are provided. With concrete valley gutters, a minimum longitudinal slope of 0.002 foot per foot may be permitted.

(7) It is desirable that all detention basins be emptied within 36 hours. However, the requirements of this Code may dictate that it will require more than 36 hours to empty the basin. In that case, the basin shall be emptied in no more than 72 hours. The drainage report shall indicate how long it will take to empty each basin.

~~(5) It is the policy of the town that increases in runoff volume over the existing condition for the 2- and 10-year storms be detained on-site and allowed to infiltrate wherever possible. Detention basins shall be designed, where practical, to allow the difference in runoff volume between the pre- and post-development conditions to infiltrate into the ground during the detention time. The maximum detention drain time allowable is 36 hours.~~

~~(6) Detention systems that allow infiltration of storm water shall incorporate some form of infiltration enhancement system, which may include but are not limited to gravel-filled engineered basin floors or trenches to minimize scaling of the basin bottom.~~

(78) All detention basins shall have a minimum freeboard of 1 foot above the 100-year 24-hour peak stage in the basin.

(9) In addition to meeting the standard detention basin requirements, underground storm water detention shall meet the following requirements:

- (a) Underground detention shall be designed with adequate access for inspection and maintenance.
- (b) Final plats for subdivisions utilizing underground detention shall (1) state who is responsible for inspection and maintenance of the underground detention, (2) provide a funding source for such inspection and maintenance, and (3) have the following note, "The owner shall retain a registered civil engineer, or other personnel as approved by the Town Engineer, to provide annual inspections of all detention facilities and provide annual reports to the Town of Payson Town Engineer."
- (c) The final improvement plans for all developments utilizing underground detention shall have the following note on such improvement plans, "The owner shall retain a registered civil engineer, or other personnel as approved by the Town Engineer, to provide annual inspections of all detention facilities and provide annual reports to the Town of Payson Town Engineer."

(C) *Retention policies.*

(1) Stormwater retention basins are generally not encouraged within the town, due to potential problems associated with long-term ponding of storm water. Retention basins shall be emptied by infiltration. The maximum depth allowed for a retention basin is one foot unless adequate percolation is provided. ~~However, retention basins may be permitted to meet storm water detention criteria when a more conventional storm water detention basin is impractical (e.g. if adequate grade is not available for draining the basin). The most desirable method for disposal of storm water from a retention facility is to pump the retained water to a suitable gravity-controlled drainage system.~~

(2) Retention basins shall be designed to reduce the peak discharge from the 2-, 10-, and 100-year 24-hour storm to no more than 75% of at or below the pre-development peak discharge.

(3) Maximum disposal time for storm water runoff for retention facilities is 36 hours.

(4) Retention systems that utilize subsurface disposal of storm water shall incorporate some form of infiltration enhancement system such as gravel-filled engineered basin floors or trenches to minimize sealing of the basin bottom. A soils report, including a site specific percolation test, shall be required in order to demonstrate that the basin will drain within the maximum disposal time of 36 hours. Percolation tests shall be performed in accordance with State of Arizona, ADEQ, Aquifer Protection Permit Rules, Chapter 9, Section R18-9-A310. Authority for ADEQ to establish rules in this regard comes from A.R.S. Title 49, Article 3.

Approval of a site-specific percolation rate by the ~~Public Works~~ Town Engineer is discretionary. If the percolation rate is not acceptable, the basin must be drained by other acceptable means within the required 36-hour period. An Aquifer Protection Permit may be required by ADEQ for disposal of storm water using retention basins.

~~(5) If a pump is to be used to drain a retention basin, it should be provided with an automatic control switch with a vertical float mechanism, or an equivalent device. A pump inlet box should be provided, and the inlet should be screened. Pump systems must be privately owned and maintained.~~

(D) Points of Compliance

(1) The initial point of compliance for the reduction of storm water flows shall be at all locations where flows exit the development site.

(2) Additional points of compliance downstream from the development property may be required by the Town Engineer.

(3) Post development sheet storm water flows leaving a development shall not exceed the pre-development storm water sheet flows.

(~~D~~E) Maintenance policies.

(1) A maintenance plan shall be prepared in conjunction with the detention/retention basin design that includes both scheduled and unscheduled maintenance activities and who is responsible for such maintenance. Scheduled maintenance includes such items as mowing, pruning, and trash removal that are to be performed on an annual basis. Unscheduled maintenance includes repairs, usually made necessary by storms and floods, which are discovered either during regularly scheduled annual inspections, or during inspections made after flooding. The maintenance plan shall be approved by the Town Engineer prior to approval of the final improvement plans.

(2) Maintenance ramps or other access shall be provided into detention/retention facilities in order to facilitate scheduled and unscheduled maintenance activities. Access easements shall be provided to all detention/retention facilities.

(3) Maintenance of local detention/retention facilities, provided in conjunction with new developments, shall be the responsibility of the private property owner or HOA. The town shall reserve the authority to periodically inspect privately owned detention/retention basins to ensure satisfactory maintenance is being provided. If the town identifies deficiencies that will affect the intended operation of the facility, the town will provide written notification by registered mail of such deficiencies to the property owner. The maintenance entity will be given 30 calendar days from the date of receipt of written notification to correct the deficiencies. In the event the deficiencies are not corrected to the satisfaction of the ~~Public Works~~ Town Engineer within 30 calendar days, the town will make the necessary repairs and the cost will be invoiced to

the maintenance entity. If payment is not received within 60 calendar days from the invoice date, the town shall assess all properties within the development for the amount invoiced. A variance to the 30-day repair period may be granted at the discretion of the ~~Public Works~~ Town Engineer based on progress or extenuating circumstances.

(4) Final Plats, Development Plans and CC&R's shall have notes stating:

(a) ~~Who The owner(s) shall be solely responsible for the operation, maintenance, and liability for detention/retention systems. If there is an HOA established, then the HOA shall be responsible for the operation, maintenance, and liability for the detention/retention systems.~~

(b) The town ~~staff~~ may periodically inspect the detention/retention facilities to verify that scheduled and unscheduled maintenance activities are being performed adequately.

(F) Variances.

(1) A variances to one or more of the requirements of this section may be granted upon a showing that both:

(a) On-site detention results in an increase in peak discharge at locations in the watershed downstream of the proposed project due to timing of peak discharges, and on-site retention is impractical. The increase must be greater than if on-site detention is constructed. There must be sufficient hydraulic capacity in the downstream drainage conveyance system to convey the proposed condition 100-year peak discharge to the Town corporate boundary without damaging homes or property, either within or outside the Town. The proposed condition peak discharges may not result in any increase in the future condition peak discharges listed in the PDMP; and

(b) The quality of the storm water runoff will not reduce the quality of any downstream waters.

(2) The Town Engineer may grant a variance to one or more of the requirements of this section if the developer provides downstream drainage improvements such that:

(a) The existing flows are directed into a channel or storm drain that has adequate capacity to handle the flows, and

(b) There is a downstream location that can be improved to enhance existing downstream drainage facilities and neighborhoods, and

(c) The quality of the storm water runoff will not reduce the quality of any downstream waters.

(3) Any variance requested pursuant to this subsection, must be requested in writing. If the Town Engineer approves such variance, such approval shall be in writing.

(4) If a variance is granted, the Town Engineer may assess the developer a fee equal to the estimated cost of constructing the on-site detention facilities. This fee will be deposited with the town prior to issuance of a grading permit. The fee will be placed in an impound account and used for future construction of regional detention or drainage conveyance facilities. The total amount of the fee will be based on the difference between the post-development and 75% of pre-development runoff volume for the site from a 100-year 24-hour storm. A standard fee based on dollars per acre-foot of excess runoff volume will be set by the Town Engineer, and revised on an annual basis.