Appendix A

Provisional Flash Flood Risk Area (PFFRA)
Revision Request: County Guidance.

Purpose

The purpose of this document is to establish a structured review process to evaluate county-submitted requests to revise the Provisional Flash Flood Risk Areas (PFFRA). County requests may raise two separate questions: whether the underlying flood-hazard or exposure information should be corrected and whether an outdoor warning siren is warranted when the hazard and exposure remain valid. This process establishes separate review paths for those questions, allowing valid flood-risk information to remain mapped while the TWDB separately evaluates the county's justification that a siren is not warranted. Based on this review, the TWDB Executive Administrator (EA) will present the proposed map revisions, recommendations, and supporting record to the Board. The Board will consider the recommendations and take final action identifying the areas that warrant outdoor warning sirens. This framework does not establish categorical exemptions from Senate Bill 3 (SB 3).

County review and local information

The PFFRA maps represent a screening-level assessment developed using consistent datasets and methods across all 30 SB 3 counties. They reflect the best available information but do not depict every possible flood condition.

Counties are expected to conduct a good-faith review of the provisional hazard and exposure information using their local knowledge and reasonably available information. Counties are not required to reproduce TWDB statewide methodology but must identify known errors, changed conditions, and relevant local information supporting each requested revision.

County-certified local information may support a correction to mapped hazard or exposure information or a determination that a siren is not warranted. Each county must certify the accuracy and completeness of the local information and justification supporting its requested revisions.

Governing criteria for county requests and decision codes

County requests may be based on changed conditions, incorrect information, previously unavailable information, or justification that a siren is not warranted. These bases explain why the county is submitting information that differs from, supplements, or requires reconsideration of the provisional county map.

The R1 through R4 codes identify the type of revision requested. Table 1 below provides the criteria, examples, decision path, and expected results for each code. Each revision area

should be assigned at least one applicable R1 through R4 code and include supporting justification to document each requested action and the reason for it.

- **R1: Hazard or Flood-Data Correction:** Corrects the mapped flood hazard based on better or more accurate information.
- **R2: Exposure Correction:** Adds, removes, relocates, or reclassifies mapped exposure.
- **R3: Spatial Refinement:** Corrects the location or extent of otherwise valid hazard or exposure.
- **R4: Siren Not Warranted Determination:** Retains the applicable mapped hazard and exposure information but evaluates whether an outdoor warning siren is warranted.

Review pathways and code sequencing

The reason codes (R1 through R4) support three separate review paths. A county may (1) use R1 through R3 to request corrections to the mapped hazard, exposure, or spatial extent; (2) proceed directly to R4 when it is not requesting changes to that information; or (3) request corrections under R1 through R3 and then proceed to R4 for the same area. When a county requests both a correction and an R4 determination for the same area, the applicable R1 through R3 requests will be reviewed and resolved first so that the R4 evaluation is based on the resulting hazard and exposure information. R1 through R3 corrections are not otherwise required before a county may submit an R4 request.

Code	Reason or Classification	Criteria	Potential Examples	Decision Path	Result
R1	Hazard or Flood-Data Correction	Submitted information is more current, accurate, detailed, or spatially precise than the original source and changes the mapped hazard.	Updated hydraulic model; corrected Flood Quilt information; improved terrain or channel data; documented physical change.	Correct the PFFRA	Revise the hazard component of the corrected PFFRA.
R2	Exposure Correction	Local information shows that exposure is missing, outdated, incorrectly located, or misclassified. Any remaining valid exposure is retained.	Demolished building; storage structure treated as occupied; closed campground; newly identified outdoor venue.	Correct the PFFRA	Add, remove, or reclassify exposure in the corrected PFFRA.
R3	Spatial Refinement	The hazard or exposure remains valid, but local information supports a more accurate location or extent.	Incorrectly mapped park boundary; mapped boundary extending beyond the supported hazard or exposure; corrected feature location.	Correct the PFFRA	Modify the PFFRA boundary while retaining all supported hazard and exposure.
R4	Siren Not Warranted Determination	The mapped hazard and exposure are not being disputed through the R4 request. If the county also requests R1–R3 corrections for the same area, those corrections are resolved before the R4 request is evaluated. County-certified local information must support a finding under one or more R4 classifications that an outdoor siren would not provide a material and actionable warning benefit.	Limited warning audience; controlled access; site conditions limiting effectiveness; or localized exposure producing disproportionate mapped extent relative to the warning audience.	Evaluate whether the county's R4 request is supported.	Retain applicable hazard and exposure. If supported, EA recommends Siren Not Warranted for Board consideration.
R4.1	*Building-Only, Limited Siren Audience*	*Mapped exposure consists only of isolated or scattered buildings, and county-certified information demonstrates that the area is not reasonably expected to contain a recurring warning audience.*	*Isolated permanent residence; scattered agricultural buildings; limited-occupancy commercial or agricultural property.*	*Evaluate whether the county's R4 request is supported.*	*Retain applicable hazard and exposure. If supported, EA recommends Siren Not Warranted for Board consideration.*
R4.2	*Controlled Access*	*Access is controlled, and the facility operator can reasonably identify, account for, and directly notify employees, visitors, contractors, and other persons onsite.*	*A water treatment plant or secured industrial facility with controlled entry and documented procedures for accounting for employees, contractors, and visitors onsite.*	*Evaluate whether the county's R4 request is supported.*	*Retain applicable hazard and exposure. If supported, EA recommends Siren Not Warranted for Board consideration.*
R4.3	*Limited Material Siren Effectiveness*	*Site-specific technical analysis demonstrates that no reasonable siren configuration can provide effective audible coverage or a material and actionable warning benefit to the identified warning audience.*	*Terrain or acoustic limitations that prevent reasonable siren configurations from providing effective audible coverage.*	*Evaluate whether the county's R4 request is supported.*	*Retain applicable hazard and exposure. If supported, EA recommends Siren Not Warranted for Board consideration.*
R4.4	*Disproportionate Mapped Extent Relative to Warning Audience*	*A localized exposure feature caused a substantially larger area to be treated as requiring siren coverage, and the remaining area has no separate warning audience.*	*One isolated building triggers a long floodplain segment; exposure is concentrated in only one portion of a larger PFFRA.*	*Evaluate whether the county's R4 request is supported.*	*Retain applicable hazard and exposure. If supported, EA recommends a refined boundary for the area proposed to remain siren-warranted for Board consideration.*

Table 1. PFFRA Revision and Siren-Warrant Determination Codes.

The table summarizes the classifications; additional definitions and evaluation considerations are provided in the Application of R4 section. R4 denotes a request for a Siren Not Warranted determination and must be accompanied by at least one applicable R4.1 through R4.4 classification. Alternative warning methods may be documented only as supplemental information and are neither an R4 classification nor an independent basis for the determination.

Application of R4

For purposes of R4, a warning audience means persons who may reasonably be expected to be outdoors within the affected area and able to receive and act on an outdoor siren warning. Population size alone does not determine whether a warning audience exists.

R4 applies when the county is not requesting further changes to the mapped hazard or exposure information for an area but recommends that an outdoor warning siren is not warranted based on local conditions. The county must explain why a siren would not provide a material and actionable warning benefit for the population and conditions within the area.

An R4 request does not remove or revise valid hazard or exposure information. That information remains on the proposed corrected PFFRA while the TWDB separately evaluates the county's justification for an EA recommendation and Board consideration.

Each R4 request must be assigned at least one applicable R4.1 through R4.4 classification and supported by county-certified local information. If more than one classification applies, the county must justify each applicable classification.

R4.1: Building-only, limited siren audience

R4.1 may apply when the mapped exposure within the PFFRA consists only of isolated or scattered buildings and county-certified information demonstrates that the area is not reasonably expected to contain a recurring warning audience. The presence of an isolated building or residence does not by itself support R4.1.

The county must evaluate and document relevant factors such as

- building type and occupancy;
- permanent, seasonal, or short-term use;
- isolated, scattered, or concentrated development;
- expected outdoor activity;
- public access;
- the presence of camps, parks, trails, recreation, or river access; and
- any recurring, seasonal, or transient warning audience.

Potential examples: Scattered agricultural buildings, an agricultural property without recurring public or outdoor use, or an isolated residence with documented limited outdoor activity and no recurring public, seasonal, or transient warning audience.

R4.2: Controlled access

R4.2 may apply when mapped exposure is located within a gated, secured, or otherwise access-restricted facility and county-certified information demonstrates that the facility operator controls entry and can reasonably identify and account for the people onsite, and has established procedures to directly notify them of potential flash-flood conditions.

Controlled access restricts public entry and enables the operator to manage and account for everyone onsite. Private ownership or restricted access alone does not support R4.2.

The county must evaluate and document relevant factors such as

- controlled or restricted access;
- number and type of occupants;
- visitor and contractor procedures;
- ability to directly notify and account for occupants;
- whether employees, contractors, or visitors routinely work outdoors and how they would receive and respond to flood warnings;
- hours and seasonal use;
- emergency procedures; and
- whether public access occurs outside facility controls.

No fixed occupancy threshold applies. Controlled access alone is not sufficient. The county must demonstrate that the facility has procedures capable of directly notifying and accounting for employees, contractors, visitors, and outdoor workers who may be onsite. *Potential examples:* A secured utility facility or controlled-access industrial facility with established procedures to directly account for and notify all persons onsite.

R4.3: Limited material siren effectiveness

R4.3 may apply only when site-specific technical analysis demonstrates that no reasonable siren configuration can provide effective audible coverage or a material and actionable warning benefit to the identified warning audience. The analysis must consider a reasonable range of siren locations and system configurations using appropriately conservative assumptions. Uncertainty or the failure of a single location or configuration is not sufficient.

The county must evaluate and document relevant factors such as

- terrain and acoustic limitations;
- population distribution;
- reasonable siren locations and configurations;
- whether directional or multiple sirens could provide coverage; and
- available acoustic modeling, field testing, manufacturer information, or other technical information supporting the coverage analysis.

R4.3 requests are not justified merely because one proposed location is ineffective, one landowner will not provide property access or easement, multiple sirens would be required, the county lacks an existing gage, or the system would be expensive to install or maintain. *Potential examples*: An area where site-specific acoustic analysis demonstrates that terrain, development patterns, ambient noise, or other physical conditions prevent reasonable siren configurations, including directional or multiple sirens, from providing effective audible coverage.

R4.4: Disproportionate mapped extent relative to warning audience

R4.4 may apply when the existing or corrected hazard and exposure information remains valid, but the geographic extent of the area proposed to remain siren-warranted is disproportionate to the location and nature of the warning audience. This may occur when a single building or small group of buildings causes a much larger flood-prone area to be shown as warranting siren coverage even though the remainder of the area contains no separate warning audience.

The county must evaluate and document relevant factors such as

- the location and extent of the exposure that triggered the PFFRA;
- whether exposure is concentrated within only part of the area;
- whether the remaining area has an independent warning audience;
- whether the proposed boundary of the area to remain siren-warranted can be reasonably refined; and
- whether all supported hazard and exposure will remain visible on the corrected PFFRA.

R4.4 differs from R3. Under R3, the mapped hazard or exposure location is inaccurate. Under R4.4, the mapping remains valid, but the extent of the area proposed as warranting siren coverage is disproportionate to the warning audience. *Potential examples:* One isolated building triggers a long floodplain segment, or exposure is concentrated within only one portion of a larger PFFRA.

Conditions favoring retention as siren-warranted

The following conditions create a strong presumption that an area remains siren-warranted and may prevent the EA from recommending that the area be identified as Siren Not Warranted:

- Camps and campgrounds
- Parks, trails, recreation areas, and public river access
- Documented flood fatalities or injuries
- Schools and public gathering locations
- Concentrated residences
- Recurring seasonal or transient populations
- Other high-consequence exposure

A county may still submit an R4 request for an area with one or more of these conditions, but it must address each applicable condition and explain why a siren is not warranted. If the county does not provide sufficient information to evaluate an applicable condition, the EA will not recommend that the area be identified as Siren Not Warranted.

Factors that are not independently sufficient

The following do not independently support an R4 recommendation:

- Cost or insufficient funding for installation or maintenance
- County preference
- Private ownership
- Lack of property access or easement
- The inability of one proposed siren location or configuration to provide adequate coverage when other reasonable options have not been evaluated
- Availability of another notification method

Role of alternative warning methods

Consistent with the PFFRA User Guide, a county may identify another warning method that it believes would provide more direct or effective notification than an outdoor warning siren under the conditions of a particular area. The TWDB will consider the county-proposed method only as supplemental information when evaluating the applicable R4 classification. Alternative warning is not a separate R4 classification or an independent basis for determining that a siren is not warranted. The county must identify at least one applicable R4.x classification and justify the determination based on that classification.

The county should provide

- the population or facilities that must be warned;
- the proposed warning or notification method;
- why the method is more appropriate or effective than an outdoor siren;
- how quickly the warning can be delivered;
- how occupants, visitors, workers, and transient populations will be reached;
- who will operate and maintain the method;
- the protective action recipients will be instructed to take; and
- whether the method is operational or will be implemented through an identified and funded process.

A flood-monitoring system, gage, or public dashboard is not sufficient by itself. The county must explain how information from the system will be converted into timely notification that reaches the identified population.

For each approved R4 area, the TWDB will document the applicable R4 classification and any county-recommended alternative warning method submitted as supporting information. If the Board determines that the area warrants an outdoor warning siren, the alternative method does not replace the siren required under Texas Water Code § 16.502.

Required supporting information

Counties must submit a minimum evidence package but may document groups of similar revision areas together. This balances timely review with an adequate administrative record.

- **Reason and short justification for every revision area:** Identify the applicable R1 through R4 code, each applicable R4.x classification for R4 requests, requested action, and a concise explanation.
- **One narrative for each group of similar areas:** Identify the revision areas included and describe the shared conditions, criteria applied, grouping method, and known exceptions.
- **Identification of local sources:** Identify the records, datasets, observations, studies, photographs, or other local information used.
- **Representative or summary evidence:** Provide enough information to demonstrate how the classification was applied without requiring a separate report for every property.
- **Location-specific supporting information:** Support each proposed revision individually or through grouped evidence. For siren-not-warranted requests, explain

why the change is justified despite any conditions favoring retention, high-consequence exposure, or conflicting information.

- **County Local-Information Certification:** An authorized county official certifies that all required information has been submitted, the information is accurate and complete, grouped areas meet the stated criteria, and exceptions were identified.

Each individual revision area will be documented from submission through final Board action, including its reason codes, justification, narrative reference, requested action, EA recommendation, and final Board decision. County certification of local information establishes responsibility for the factual representations submitted by the county but does not transfer the responsibility of the TWDB to review the request or the Board's responsibility to make the final determination.

Review and approval process

The TWDB reviews county revision requests based on the complexity and potential consequences of the requested revision and the completeness and consistency of the supporting information. The TWDB may request clarification or additional information. The county may revise or supplement its submission in response to written review comments until comments are resolved or remaining issues are documented.

Following review, the EA presents recommendations and proposed maps to the Board for consideration in an open meeting. Staff review and EA recommendations do not constitute final Board approval. Following Board action, the TWDB publishes the approved revisions in the final GIS data.

Board approval and county responsibilities

Map corrections under R1 through R3 change the applicable hazard, exposure, or spatial information. An approved R4 determination changes the area identified as warranting an outdoor warning siren while retaining valid hazard and exposure information.

Upon Board approval, the areas identified by the Board as warranting outdoor warning sirens are final and binding for the applicable county or defined portion of the county. The appropriate municipality or county remains responsible for final siren locations, system design, installation, operation, maintenance, and demonstrating compliance with applicable TWDB requirements in accordance with the guidance manual.

County local information certification for map revisions is separate from the compliance certification required by Texas Water Code § 16.502(j). A county or municipality seeking

TWDB financial assistance other than assistance for an outdoor warning siren must certify to the Board that it is in compliance with § 16.502.

This guidance addresses revision circumstances identified at the time of issuance. If a request presents materially different circumstances not addressed by the established criteria, the TWDB may clarify or revise the guidance, subject to applicable review and approval, before completing its evaluation of the request.

Board-approved maps remain final and binding unless revised based on changed conditions, corrected information, or newly available information through the applicable review process and subsequent Board approval.