EXAMPLES OF PRACTICAL SOLUTIONS

The following examples are presented for reference in addressing similar situations. Unique issues in specific instances may require modification of these solutions or elimination from consideration. Appropriate judgment should be applied in each circumstance.

Diverting Drainage

Iowa Code Section 314.7 allows that public agencies should use diligence in maintaining surface flow of water in natural channels, and any turning of natural drainage patterns must avoid injury to adjacent property owners. In general, any diversion of surface drainage from natural patterns is avoided by public agencies during construction or maintenance activities. However, on occasion that practice may prove beneficial to both property owners and the agency.

Scenario

As part of the construction of relocated US 18 in Cerro Gordo County, an intersecting local road, Nettle Avenue, was closed and a section of it subsequently obliterated. Prior to obliteration, surface drainage was conveyed to nearby Chelsea Creek in lateral ditches along the local road. Eliminating this outlet would result in a backup of drainage on US 18 right-of-way and beyond. To prevent this backup, a diversion ditch was proposed along US 18 to the same Chelsea Creek, but this action would affect historic drainage patterns through an additional property. Surface drainage would enter Chelsea Creek upstream of that property in lieu of downstream. However, since the volume of diverted flow was quite low compared to creek capacity, the adjacent owner did not object to the action and acceded to an agreement documenting the relocation of surface drainage.

Tip

Prior to undertaking such an action, agencies should ascertain that minimal probability for property damage would incur from a drainage diversion, even if all current property owners are willing to sign a release. If subsequent damages are realized, assessment of responsibility to the road agency may still be awarded by the courts.

Obstructing Drainage

Under common law principles and Code of Iowa requirements, downstream (servient) land owners are prohibited from obstructing flow in natural channels to the detriment of upstream (dominant) owners. When a dispute arises between adjacent owners, occasionally a public agency may be drawn into the matter and identification of a solution is in the best interest of all parties.

Scenario 1

In a Polk County instance, an upstream land owner complained to the Iowa Department of Transportation

![Map of the change in drainage due to relocation of US 18](image-url)
Examples of Practical Solutions

(Iowa DOT) of inadequate drainage across the public right-of-way. Using surveys and historic photos, the Iowa DOT determined that an existing culvert under the highway was constructed properly with a flow line that would provide proper drainage. However, the Iowa DOT further found that silting and farming practices on the immediate downstream property had resulted in an obstruction to natural flow approximately three feet higher than the highway culvert flow line. This difference in elevation caused significant water ponding on public right-of-way and other upstream land. The downstream owner had installed a tile system at the approximate elevation as the highway culvert, together with a beehive intake just outside the public right-of-way.

After a thorough review, the Iowa DOT offered a possible solution to mitigate the ponding issue. It proposed to install a short pipe from the highway ditch to connect with the downstream tile on private property. An agreement between the owners would be needed for a right of entry to construct the connecting pipe and future maintenance thereof. This initiative would not restore ideal natural drainage but would alleviate a significant amount of the occasional ponding. Barring acceptance of this solution, the upstream owner could seek injunctive relief through the Iowa courts.

Tip

Activities by downstream owners can result in silt build-up as well as ponding, but sometimes through negotiation a solution can be found.

Scenario 2

A landowner adjacent to a county road constructed a dike just downstream from an existing pipe culvert. This dike caused ponding of water and silting, eventually filling the culvert. The county authorities met with the property owner and discussed the problem. It was agreed that a right of entry would be granted; the county would then remove the dike and deposit the excavated material further downstream. The property owner re-built the dike so as not to back water onto public right-of-way.

Scenario 3

Two adjacent landowners in an established drainage district are separated by a county road. Tile installed and maintained by the district drains both properties, outletting in a stream channel beyond the downstream owner’s land. Over time erosion from the upstream owner’s fields had flowed through a county road culvert and caused silt to fill an open ditch across the downstream owner’s land. To alleviate the problem and re-establish flow, the upstream owner requested the drainage district board to remove the silt from the ditch as allowed in Iowa Code Section 468.126.

The drainage district was originally designed and established to function with tile, not open ditches, in this area. As such, the district was under no obligation to maintain surface drainage in the ditch across the downstream property; the sole responsibility of the district is maintenance of the tile. Since the tile continued to function properly, it was not considered advisable for the drainage district to address overland flow in this instance.

Options for the upstream landowner would be the following:

- Petition the drainage board to include the open ditch in the district. This would require the same procedures as establishment of the original district: engineering, assessment, hearing, etc.
- Contact the Natural Resource Conservation Service (NRCS) for advice and assistance. NRCS involvement may require establishment of good
farming practices to reduce erosion from the upstream fields.
  • Initiate legal action against the downstream owner.

Agency Responsibility for Drainage Improvements

Chapter 468 of the Iowa Code describes certain responsibilities for public agencies in extending tile lines across public rights of way. However, those duties are limited to a continuation of “natural” drainage patterns. This case study presents an alternate response to differing circumstances.

Scenario

An upstream landowner wanted to drain a poorly draining area by constructing a ditch. However, the elevation of an existing culvert under an adjacent highway was too high to accommodate an open ditch. The owner petitioned the Iowa DOT to lower the culvert that had been in place for many years. The Iowa DOT denied the request, holding that the open ditch proposed by the landowner was not to accommodate “natural” drainage. The landowner then constructed a short tile system to connect the open channel on private property to the highway right-of-way ditch. In addition, the downstream landowner provided a positive outlet for this tile by lowering an existing draw. Considering these changed conditions, the Iowa DOT concluded that Iowa Code section 468.622 would compel a public agency to provide drainage accommodations for the upstream owner’s tile system. An appropriately sized pipe was subsequently installed under the highway to satisfy the upstream land owner’s request.

Flood Plain Obstructions

Severe flooding events in the past several years raised awareness of potential property damages for improvements built in areas prone to flooding. Even when unintentional and without prior notification, public agencies can incur responsibilities for obstructions placed in natural flood plain areas.

Scenario

In 1993 the Iowa Department of Transportation completed a bypass of a community in northern Iowa. Design for the highway improvement had been completed several years earlier using methodology commonly applied at that time. After the design phase but before actual highway construction, the local community completed and adopted a flood insurance study that established a regulatory floodway with 100-year frequency flood discharges and elevations. Unaware of these limitations, the Iowa DOT proceeded to construct the bypass resulting in an encroachment on these established floodway parameters. After the bypass was constructed, a major flood caused considerable damage to upstream private property. Since the road project resulted in a violation of Federal Emergency Management Agency (FEMA) regulations, mitigation was sought to satisfy FEMA requirements and relieve future damages.

Several options were considered including construction of an additional drainage structure, extension of the bypass bridges to provide more drainage capacity, construction of a flood protection levee, and/or buyout or flood proofing of improvements in the flood prone areas. In considering total cost and resultant impacts on the public, it was decided to expand the existing bypass bridges together with associated re-grading upstream. This option would satisfy FEMA requirements and meet the local Flood Plain Management Ordinance criteria.
Agency Responsibilities for Damages to Private Improvements

Construction of roadway improvements can result in many changes in the adjacent environment, some actual and some perceived. Planning and design of public projects must consider potential impacts to private property, both immediately and indirectly affected by the new facility.

Scenario

In the mid 1990s, the Iowa DOT constructed two new bridges as part of a highway bypass project in eastern Iowa. Situated between these two structures was a railroad bridge that had been constructed in the late 19th century. Both Iowa DOT bridges were designed and constructed using standards and criteria accepted at that time. Subsequent to completion of the two highway bridges, a significant flood event resulted in severe damage and closure of the railroad bridge with economic consequences for the company. Alleging that the state did not follow generally recognized engineering practices and that construction of these new bridges resulted in increased flow and velocity in the stream, the company brought suit against the Iowa DOT in District Court. The state answered that immunity from liability should be held as accepted practices for design and construction were followed. Furthermore the state alleged the damages to the railroad bridge were caused by an “Act of God,” and lack of proper maintenance by the railroad company contributed to the damages to the older bridge.

Citing Iowa Code Chapter 669, the state Tort Claims Act, and a previous court action, Connelly vs. Dallas County, the court found that the company did not establish that the new upstream bridge constructed by the state contributed in any way to the failure of the railroad bridge. The company petition was dismissed and damages against the state were denied.

Transfer of Public Improvements to Private Ownership

Local agencies often face difficult decisions regarding needed maintenance and/or replacement of very low-volume roads and structures. Options for providing continued service at the most beneficial cost to the public are worthy of consideration.

Scenario

A county in northern Iowa owned a bridge and short section of roadway serving only a single family property. The structure was deteriorated and in need of future repair. Since the bridge and road only provided access to a single farmstead, an agreement was reached between the county and property owner with the following stipulations:

- The county agreed to remove and replace the existing bridge, re-channel the creek and grade the farm access.
- The county provided a warranty against future damages from flooding for a 35-year period and agreed to repair any such damages at no cost to the property owner.
- Following completion of this improvement and in recognition of the warranty, the property owners agreed to accept ownership and future maintenance of the access road and structure.

While an agreement of this type results in an immediate expense to a local agency, long term savings and reduced maintenance are a worthwhile consideration.