Road Patterns of Indiana

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The present road patterns of Indiana reflect both the topography and history of the state. Even state road maps differentiate sharply between the irregular road patterns in unglaciated Indiana and the rectangular road patterns predominant elsewhere. On state road maps likewise the location of Indian trails and early trunk roads can be approximately traced from the course of modern highways; examples are U. S. 150 (the Buffalo Trace), U. S. 40 (the National Road) and U. S. 421 (the Michigan Road).

The local roads shown on the detailed county road maps reflect the topography and history of the state in even more clearcut patterns. In most of the state the influence of the early surveys appears in the common checkerboard pattern. The irregular ridge and valley pattern common in the unglaciated and little glaciated areas reflects the lack of gentle slopes on the hillsides. Finally near water bodies local road locations are commonly influenced by drainage problems.

It should be emphasized that patterns on roads used for through traffic are often different than the local road patterns. The through routes (generally but not always numbered state or federal highways) radiate from the principal centers; for example, 15 routes radiate from Indianapolis and 12 from Fort Wayne. Especially where traffic is heavy, through routes cut across survey lines and minor topographic features and the tendency is for these routes to become more direct. Relict bits of older road are common features along such routes and result from the desire to speed up traffic and eliminate dangerous curves by straightening the road. An especially striking example of road realignment is State 37 between Martinsville and Mitchell.

In northwestern Indiana some of the through routes follow the section lines, notably U. S. 35, 41, 231, and 421. But even in this level area most of the through routes cut more or less diagonally across the survey grid. A study of detailed topographic maps shows that many of the roads appear straighter on the state road maps than they actually are; for example, U. S. 40 east of Indianapolis at a glance appears to follow the section lines but nowhere does it do so.

The predominant pattern for local roads is the rectangular or checkerboard pattern. The area with this pattern is shown on Figure 1 in white. Throughout the area the majority of the local roads either follow or are parallel to the section lines. The roads are most commonly one mile apart, at most one mile and a half, and in thickly settled sections one-half mile apart. In some counties, for example Grant, Hancock, and Madison, the checkerboard pattern is so regular that the roads almost coincide with the section lines; everywhere in central and northern Indiana conformity of roads to section lines is common. Minor departures from the section lines to avoid streams, ponds, and

moraines are not unusual but are often so slight as to be unnoticeable on small-scale maps.

The checkerboard road system is not a particularly efficient system. Its right-angle corners slow down traffic. To get to a point to the northwest, northeast, southwest, or southeast of the starting point involves a journey of 10 miles for every 7 miles airline distance if no diagonal roads are available.

The great advantage of the section-line checkerboard was the ease with which its roads could be laid out. County roads were opened by petition[1] and the work was performed by the settlers after approval by the County Commissioners. As each man was obligated to work six days a year on the roads, there was a tendency to advocate the easier routes. When the land was first surveyed, the surveyors blazed the trees and cleared the underbrush along the section lines. The corners of each quarter section were also marked. Thus, if a county road became desirable, it was easier to follow a line already surveyed and partly cleared. Furthermore, the section-line roads took but a little land from each of the adjacent properties nor did they cut across farmsteads or upset the rectangular field pattern.

The checkerboard road pattern is also common in southern Indiana and predominates in the Wabash Lowland, the Mitchell Plain, the Scottsburg Lowland and the Muskatatuck Regional Slope. Local modifications to avoid sinkholes, ponds and streams are more common than to the north but these are minor irregularities in areas of generally straight roads and right-angle bends. Another irregularity occurs in Clark and Knox counties where road grids are diagonal to the township-range survey but parallel to the old survey grid.

The second typical road pattern (stippled on Figure 1) is an irregular network of ridge and valley roads. The road grid is somewhat more open than in the checkerboard area; nevertheless there are only five places in all southern Indiana where the local roads are more than two miles apart. The poor quality of these roads with their many steep grades, sharp curves, and rough pavements makes them less suited for traffic than the checkerboard roads. The typical road in this area uses the ridge tops as much as possible, descending briefly into the valley and then climbing up an opposite spur. This road pattern is almost universal in the Crawford, Norman, and Dearborn uplands and in a few scattered areas elsewhere.

The third typical pattern (black on Figure 1), is found along major streams and other water bodies throughout the entire state. In many places the road network of the better-drained adjacent area breaks off abruptly as the flood plain is approached. More commonly a road parallels the stream or lake but keeps some distance from the water's edge. Where stream crossings or local access to farmsteads is desired, spur roads branch off from the main road.

As traffic is increased and old roads are realigned, these regular patterns may be expected to become less conspicuous. Advances in roadbuilding machinery and the growing belief that straight roads are not necessarily the safest for driving, may give rise to new patterns.

[1] See Esarey, Logan. 1953. The Indiana Home, Bloomington. pp. 105-7.

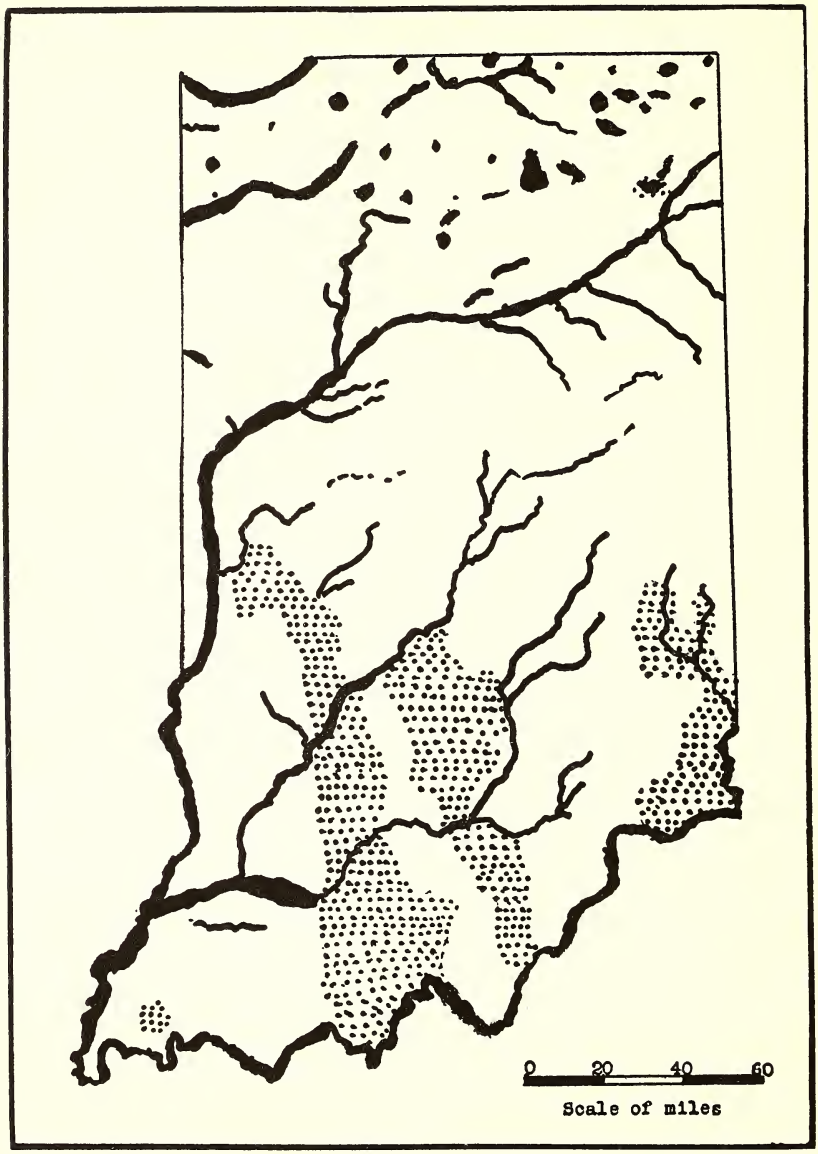

Figure 1. Local Road Patterns of Indiana. The white areas have a rectangular or checkerboard pattern. The stippled areas have ridge and valley roads. The black areas are influenced largely by water bodies.

The relief of Indiana is not so great that the course of routes need be accommodated to it if modern engineering equipment is available. Hence the failure to cut roads across relief features and the survey pattern indicates that the traffic is so modest that the redesign of the route is uneconomical.