

Introduction to a Route Selection Problem

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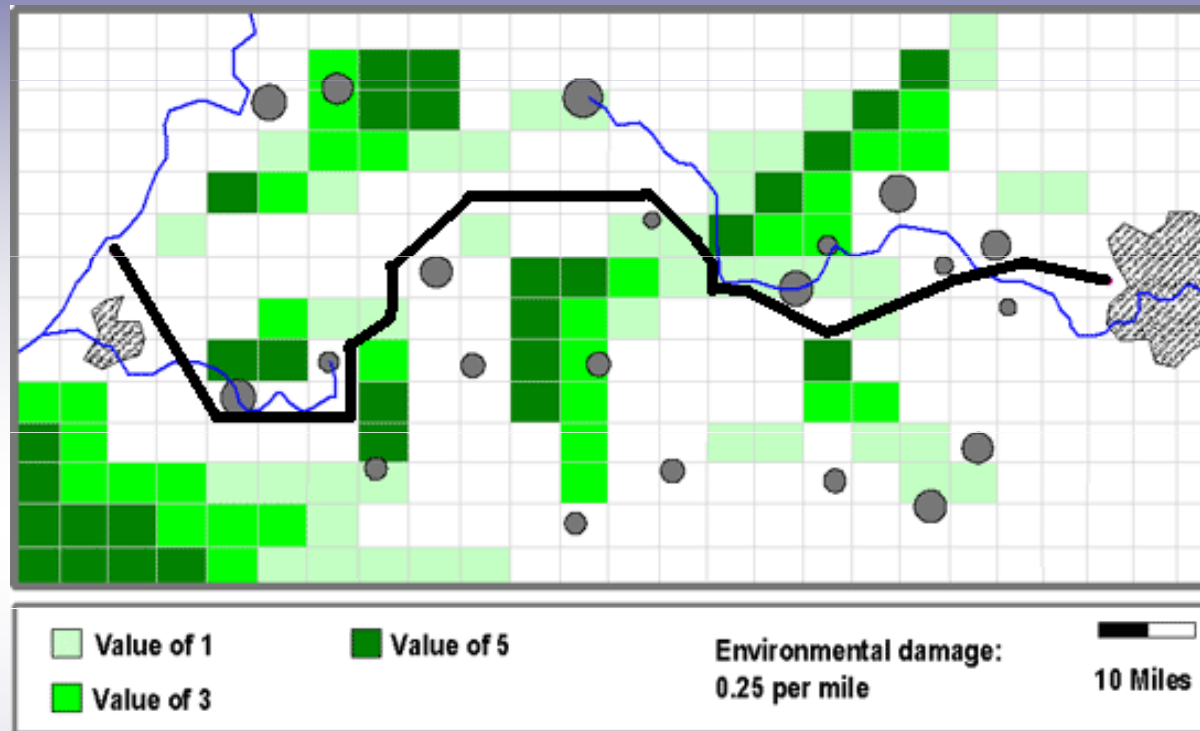
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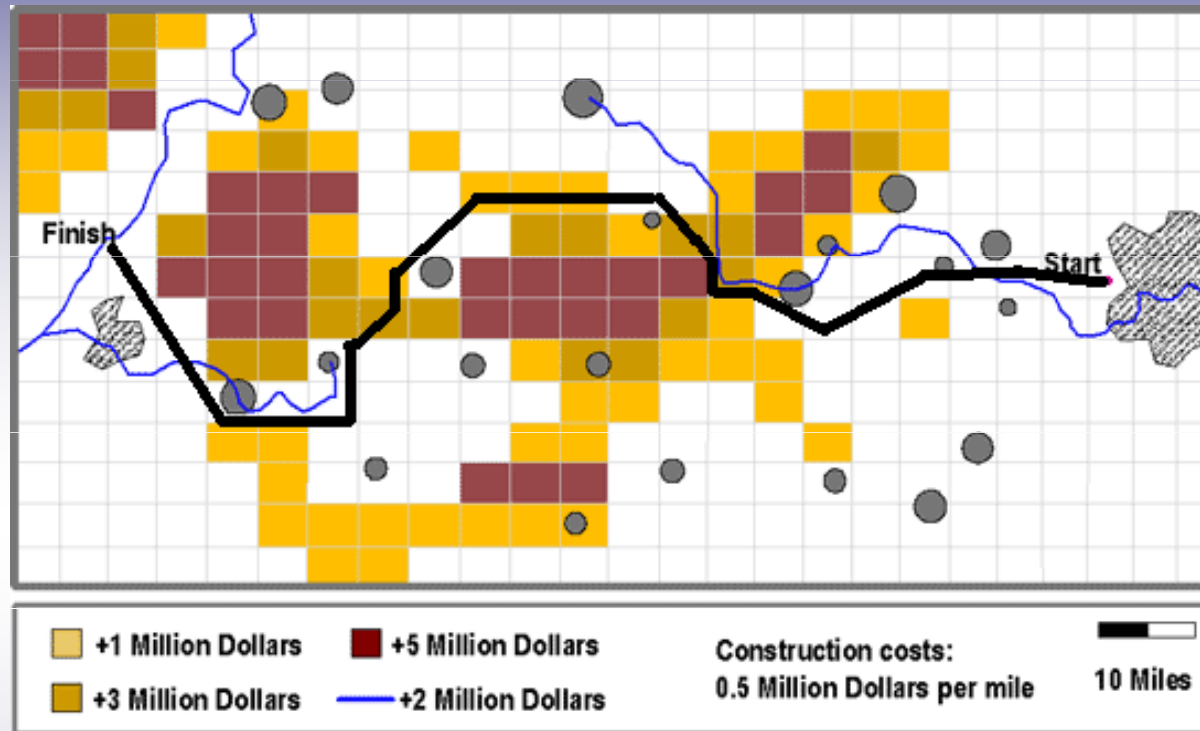
Přírodní omezení



Environmental impacts

(h) Level of environmental damage	4 units
(i) Level of environmental damage for road construction (0.25 per mile)	35,43 units
(3) Environmental score (h + i)	39,43 units

Fyzická omezení



Road length

141,7 mi.

Construction costs

(a) Basic construction costs (\$0.5 million per mile)

\$M 70,85

(b) Additional costs for rugged terrain

\$M 13

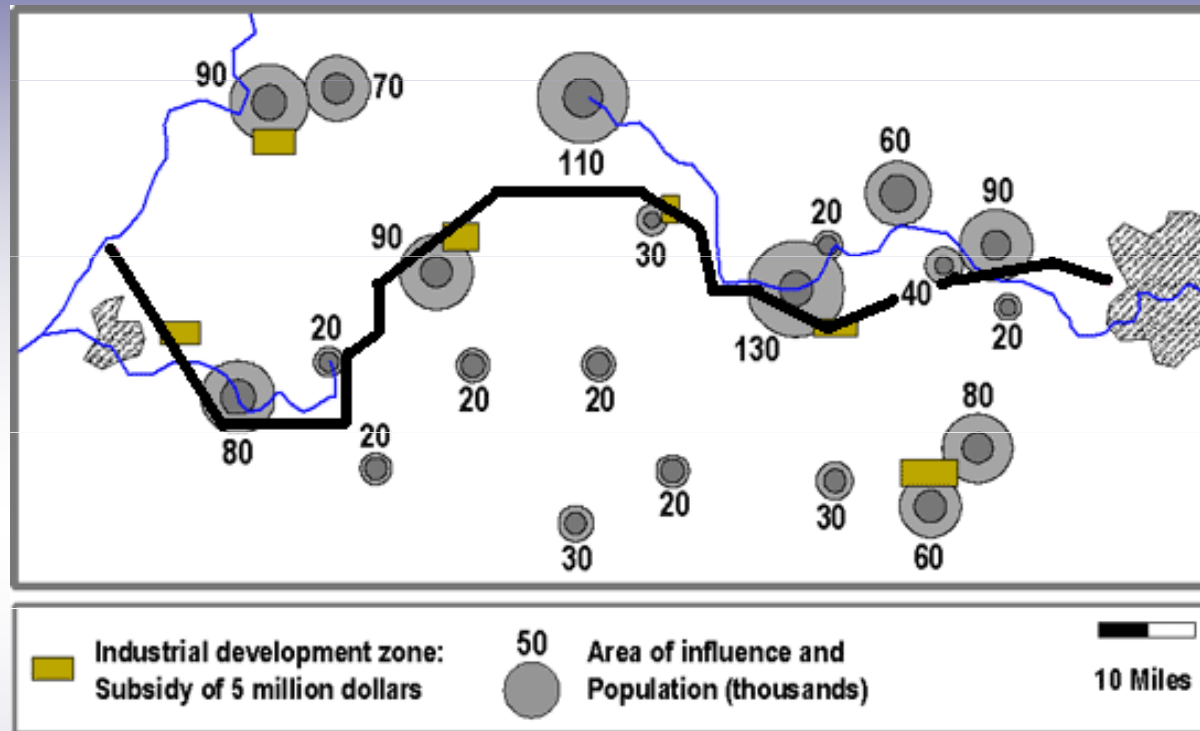
(c) Additional costs for river crossing (\$2 million per bridge)

\$M 4

Gross construction cost (a + b + c)

\$M 87,85

Ekonomický potenciál



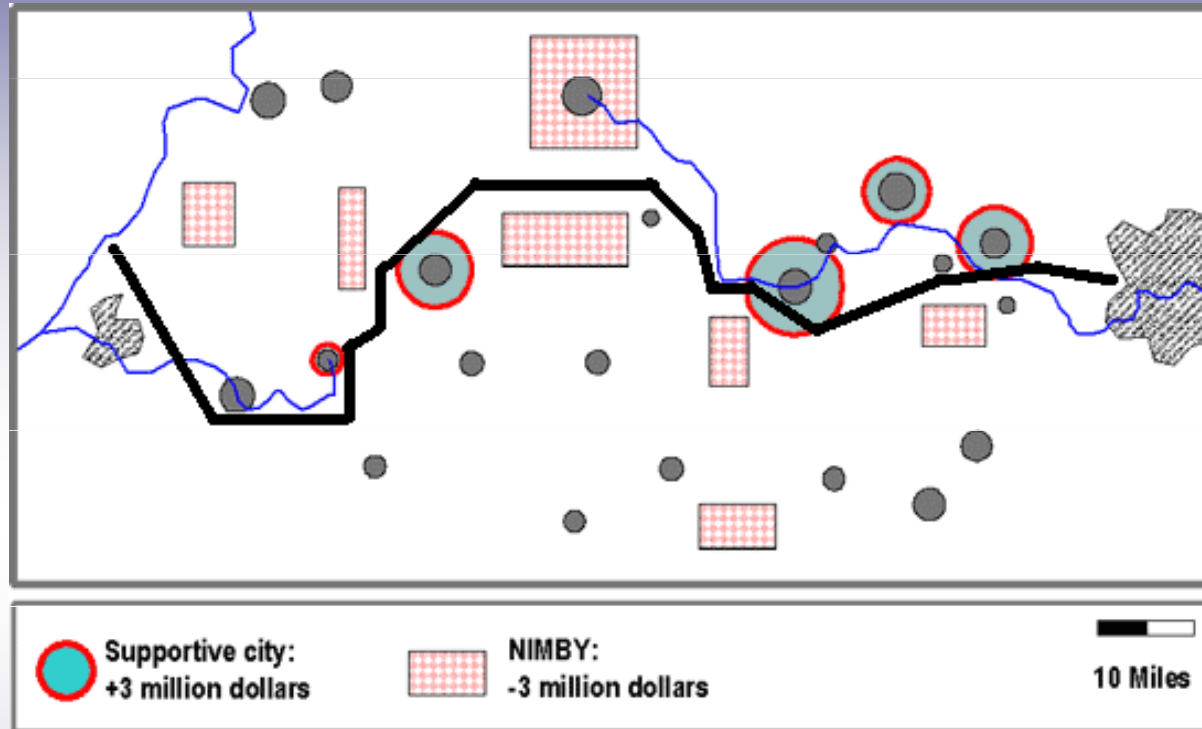
(f) To serve an industrial development zone
($\$5$ millions per zone)

$\$M$ 20

(g) Savings from providing new roads to additional population
($\$15$ per person) ... $480000 * 15$

$\$M$ 7,2

Politická omezení

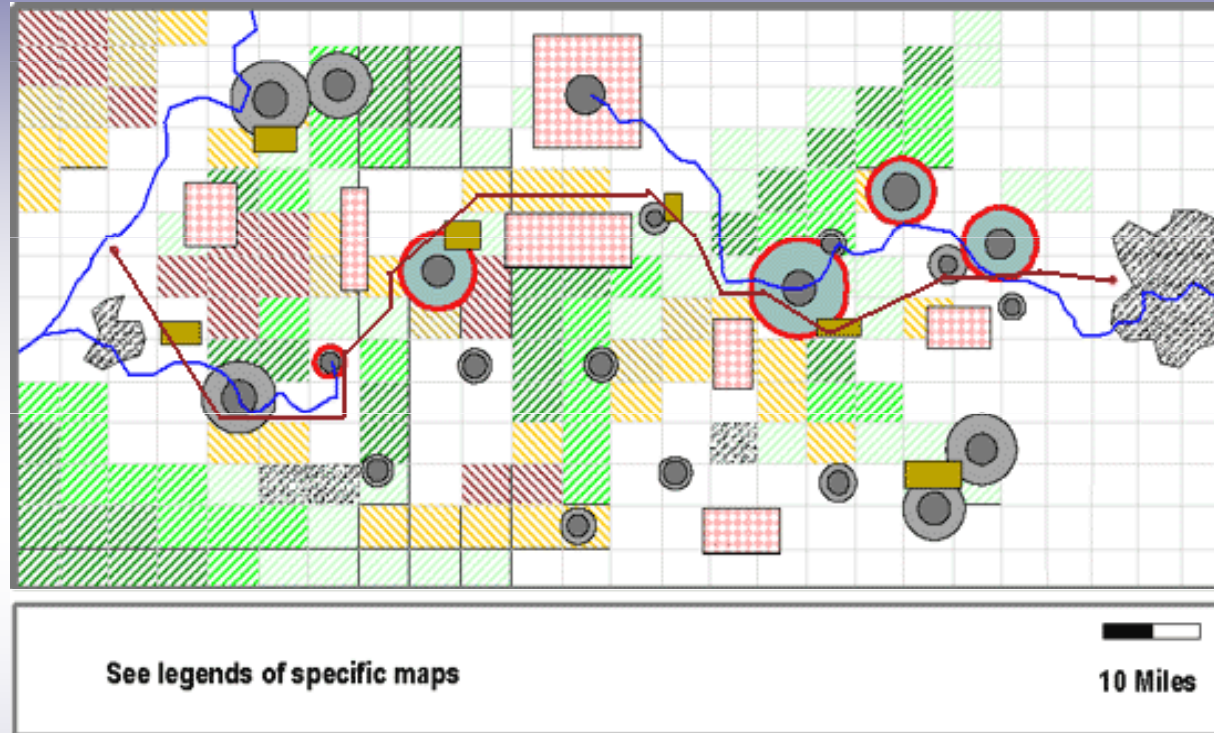


(d) Additional costs for public audiences (\$3 millions per unit) \$M 0

(e) Costs saved from collaboration
(\$3 millions per city in favor) \$M 12

(2) Total cost = Gross cost + d - e - f - g \$M 48,65

Výsledná mapa



Shrnutí

(1) Road length	141,7 mi.
Construction costs	
(a) Basic construction costs (\$0.5 million per mile)	\$M 70,85
(b) Additional costs for rugged terrain	\$M 13
(c) Additional costs for river crossing (\$2 million per bridge)	\$M 4
Gross construction cost (a + b +c)	\$M 87,85
(d) Additional costs for public audiences (\$3 millions per unit)	\$M 0
(e) Costs saved from collaboration (\$3 millions per city in favor)	\$M -12
(f) To serve an industrial development zone (\$5 millions per zone)	\$M -20
(g) Savings (benefit) from providing new roads to additional population (\$15 per person) ... - 480000 * 15	\$M -7,2
(2) Total cost = Gross cost + d - e - f - g	\$M 48,65
Environmental impacts	
(h) Level of environmental damage	4 units
(i) Level of environmental damage for road construction (0.25 per mile)	35,43 units
(3) Environmental score (h + i)	39,43 units