

Definition of Planning

It is not:

The preparation of detailed plans for roads or bridges immediately to be built - though this is a part, a final culmination of planning.

The storing up of a number of such detailed plans ready for opportune future execution - though this may occur as an outgrowth.

The devising of so-called master plans, as for the street plan of a city or the highway systems of a country - though this certainly is expected to grow out of the effort.

The formulation of period programs in the sense of the Russian 5-year plans - though this too, in a form consistent with our institutions and modes of procedure, is certainly visualized as an outcome of the undertaking.

It is:

1. A mapping of the strategy of a war upon the existing inefficiency of highway transportation.
2. A definition of the general objectives to be achieved by the coordinated action of multiple agencies; some public U. S., States, cities, counties - Chief executives, legislatures, highway departments, motor vehicle administrations, police; some private - civic and trade associations, vehicle manufacturers, transporters, shippers, the road-using public, and mass of the citizenry.
3. The amassing and digestion of facts (intelligence), and plotting of the general directions to be taken by the competent leadership and initiative of each agency and group toward the defined objectives.
4. The supply of specific guidance as needed for the planning of detailed operations at any time and in any area of the coordinated attack to assure a consistency of standard and policy making for effectual integration with the mass effort.

In Short -

It is - in the war against highway transportation inefficiencies - what the combined general staffs of the allied nations and the supreme headquarters of the allied expeditionary forces did to plan and assure the success of allied arms in the recent world war.

By way of preface

Fundamentals (some) - axiomatic

May think them self evident and unnecessary of statement

They are stated at this outset of the discussions of planning simply to make sure that we start from a common conception of basic ideas.

First fundamental - Road planning must take account of the principle of growth inhering in highway traffic. Growth principle feeble in early phases - needs fostering, subsidy. Can be killed or retarded by excessive taxation.

Experience in U. S.

First property taxation, next nominal vehicle taxes, these gradually increased, finally gas taxes and heavier vehicle taxes - property tax declining.

Consistent with benefits, which flow first to land and property, only later as roads are connected to road usage.

Strength of growth principle greatest in arterial movement, least in feeder movement.

Second fundamental - All road systems divide by function into an identical classification.

In U.S. terms - Federal aid, primary, Federal-aid secondary - county and local. (tertiary)

Rural mileage 1948

	<u>Miles</u>	<u>\$</u>
Federal Aid (primary)	220,000	7.3
Federal Aid (secondary)	380,000	12.6
County & local	<u>2,410,000</u>	<u>80.1</u>
	3,010,000	100.0

Traffic service by systems

	<u>% of total mileage</u>	<u>% of total vehicle mileage</u>	<u>Average daily traffic vehicles</u>
Federal Aid (primary)	7.3	57	1,450
Federal Aid (secondary)	12.6	22	325
County & local	80.1	21	50

Third fundamental - Road improvement should be in balance with traffic requirement.

In time this means stage development - U.S. experience.
Caution: location should be initially right, with provision for growth.

In place it means the difference of standard corresponding to system classification.

Fourth fundamental - Traffic is where people are.

Hence, importance of cities.

In U.S.: Origin and destination both urban 49.6%
Origin or destination urban 36.6%
(subtotal 86.2%)
Origin and destination both rural 13.8% -
Main highways.

Zones of city influence:

Cities of -

3,000,000 or more	35 miles
1,000,000 - 3,000,000	30 "
10,000 - 25,000	6 "

Traffic variation directly with population of connected cities, inversely with distances between - perhaps the square of distance?

Explains feeble growth of secondary and feeder road traffic.

Fifth fundamental - Highway traffic is traffic of short range.

Eleven State average

<u>Trip length</u> <u>Miles</u>	<u>Percent</u>	<u>Cumulative</u>
0 - 5	38.4	38.4
5 - 10	26.5	64.9
10 - 20	20.1	85.0
20 - 30	5.6	91.6
30 - 40	2.8	94.4
40 - 50	1.3	95.7
Over 50	4.3	100.0

Explains various things:

Short radius of city influence
Complementary rather than competitive service of
parallel road and railroad lines
Why toll roads can't serve much traffic
300 transcontinental daily trips in U.S.
Why development of highway systems should
proceed from cities outward

Sixth fundamental - Cities cannot be by-passed

At large cities 80 to 90% O & D in city
Towns 2500 - 50%
In city from 30 to upwards of 40% of traffic reaching
edges of business center not destined to center

Seventh fundamental - Highway traffic is a composite of
various speeds.

Free flow means movement of each vehicle at the
preferred speed of its operator without hindrance
of other vehicles

Hence the approach to uniformity of speed is the
approach to congestion

Hence the difference between design speed and
operating speed

Eighth fundamental - What is built must stay built

Road improvement a never-ending process

Retirement by physical depreciation and obsolescence

Lags must be made up

Ninth fundamental - Roads can be built for any vehicle, but not for an indefinite vehicle.

Hence necessity of definite decision on size and weight of vehicles to be accommodated

May differ from present regulatory limits

Design effects of various weights and dimensions -

Axle load - pavements

Gross load - bridges

Width - lane and pavement width

Height - vertical clearance

Length - curvature, sight distance

Braking capacity - sight distance

Power - grades

Tenth fundamental - Road design, vehicle regulation, and vehicle taxation must be in balance.

Roads built for vehicles

Vehicles regulated within capacity of roads as built

Vehicles taxed as used and regulated